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EXAMINATION-QUESTIONS.

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EXAMINATION-QUESTIONS

IN

ANATOMY
PHYSIOLOGY
BOTANY
MATERIA MEDICA

SURGERY
MEDICINE
MIDWIFERY
FORENSIC MEDICINE.

ARRANGED BY

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1871.

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PREFACE.

THE STUDENT, just before presenting himself for examination, experiences great difficulty in concentrating the knowledge obtained in the lecture and dissecting-rooms. This difficulty I have attempted to remove by the following collection of examination questions culled from the several Medical and Surgical Examining Boards of the United Kingdom, and from such other sources as gave completeness to the various subjects.

As the usefulness of a book of this nature depends upon the manner of using it, it may not be undesirable to offer a few remarks, and to make a suggestion which I believe will be found valuable.

The questions are arranged under the following heads:—Anatomy, Physiology, Botany, Materia Medica, Surgery, Medicine, Midwifery, and Forensic Medicine.

In Anatomy the questions are subdivided under the parts of the body to which they severally refer, and those on Surgery and Medicine are in accordance with the classification adopted by Druitt and by Tanner.

The Student should read carefully on one day a portion of his text-book, and on the following endeavour to write out answers to the questions which correspond to the part he has previously studied. By so doing he will accustom himself to be ready and concise in answering, as well as gain that confidence which is so necessary on the day of examination.

The variety and comprehensiveness of these questions leave no doubt that they will prove of the greatest assistance to all those desirous of becoming members of the Medical profession, and of thoroughly preparing themselves for the severe tests to which in the present day they will be submitted.

H. A. H.

BENTINCK HOUSE,
STROUD GREEN ROAD,
March, 1871.

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EXAMINATION QUESTIONS.

ANATOMY.

HEAD AND NECK.

1. What muscles raise the soft Palate? To what extent is it elevated in deglutition?

2. Describe the distribution of the Blood-vessels of the Brain, and its influence on the cerebral circulation.

3. Describe the Parotid Gland, its structure and connections; also the sources of its blood-vessels and nerves.

4. Enumerate the bones in connection with the edges and surfaces of the Superior Maxillary Bone.

5. What muscles bend, and what muscles extend, the Head upon the spinal column?

6. Describe the apparatus for the secretion of the Tears.

7. Of what structures do the true Chordæ Vocales consist? what are their attachments? how are they acted upon? and what is their function?

8. Describe the origin, connections, and distribution, and functions of the Spinal Accessory Nerve.

9. Describe the position of the Lenticular Ganglion; mention the nerves with which it is connected, the branches which are derived from it, and their course and distribution.

10. Name the nerves of the Larynx, and describe their origin, course, distribution, and functions.

11. Name the muscles connected with the Lower Jaw, and describe the attachment of each to that bone.

12. State the origin and insertion of the Internal Pterygoid Muscles, and their precise action in mastication.

13. Describe the Iris: its position, attachments, and structure. Mention its blood-vessels and nerves, and state the function it exercises in vision.

14. Describe the Fifth Pair of Nerves within the Cranium, and mention the openings by which it leaves the cavity. Describe the course, distribution, and function of the Third Division of the Fifth Pair.

15. Describe the position, attachments (origin and insertion), and the precise action of the Pterygoideus Externus Muscle.

16. Describe the origin, course, and insertion of the oblique muscles of the Eye-ball.

Give the action of those muscles in the combined movements of the two eyes.

17. Describe the anatomy of the Iris of the human Eye-ball.

18. Describe the origin, course, and distribution

to the muscles, of the small (motor) root of the Fifth Cranial Nerve; and state the place of origin, and the course, of the several branches of the inferior maxillary trunk along which the filaments of the motor root are conveyed to their destination.

19. Supposing the Head sawn through vertically on the left side of the *septum nasi*, describe the dissection required to obtain an inner view of Meckel's Ganglion, and its branches on the right side.

20. Give fully the dissection required to display the muscles which move the temporo-maxillary joint, and show the component parts of that articulation. Describe the articulation and its movements.

21. Describe the shape and position of the Occipital Bone, its connection with other bones, and the blood-vessels and nerves in its immediate vicinity.

22. Describe the boundaries of the Cavity of the Tympanum. Enumerate the parts found therein, and give the functions of these parts.

23. Describe generally the structures through which the rays of light pass before they reach the Retina, and state what changes they produce in the course of these rays.

24. Describe the situation, and the connections, with muscles, blood-vessels, and nerves, of the Submaxillary Gland and Duct. State also the chemical constituents of Saliva and its effects on Food.

25. Describe the form, course, and structure of the

Adult Trachea, and mention its relations to contiguous parts.

26. Describe the structure and uses of the soft Palate and Uvula, and mention the means by which their functions are effected.

27. Describe the Crystalline Lens; its position, relation to contiguous parts, connections (how it is held in its place), and structure. State also the use of the Lens in Vision.

28. Describe the joint between the Skull and the Atlas, and between the Atlas and the Axis. Mention the movements possessed by each of them, their extent (range), and the means by which they are limited. Mention also the ligaments pertaining to each of these joints.

29. Describe the general structure of the Tongue; its blood-vessels; its nerves and their functions; mention the muscular fibres which influence its different movements and changes of form.

30. Describe the Dura Mater in the Cranium, and mention its structure and uses.

31. Describe the Vitreous Body; and state the effect of the transparent media of the Eye in vision.

32. Describe the course, distribution, and function of the Hypoglossal Nerve.

33. Mention the various parts to which the Pneumogastric Nerves are distributed; and state what are the functions supposed to be conferred on each of these parts by this distribution.

34. What is 'Accommodation' of the Eye? Give proof of its existence. State the changes which occur in the Eye during the act of 'Accommodation,' with the methods by which they are ascertained. Mention also the most probable explanation of its mechanism, and the evidence on which the explanation is founded.

35. Describe the structure and functions of the Medulla oblongata.

36. Give the divisions and branches of the Internal Maxillary Artery.

37. Name the muscles, and describe the vessels and nerves, with their branches, that are distributed to the eye-ball and parts surrounding the orbit.

38. Describe the changes which take place in the temporal bone between birth and puberty.

39. Describe the velum interpositum, and the choroid plexuses of the brain; the veins of Galen; and the arteries supplying these parts.

40. Tabulate the muscles concerned in the rotation of the head. From what nerve and vessel is each muscle supplied?

41. The dissection of the glossopharyngeal nerve outside the skull.

42. Describe the Superior Maxillary Bone, and its connections with other bones, adopting the following order:—1st, the orbit-facial surface; 2nd, the naso-palatine surface, and the antrum; 3rd, the *margins.*

43. Commencing at the integuments, describe the dissection required to display the left Carotid Artery from its origin to its division into internal and external carotids, describing the parts as they are met in the course of the dissection, and mentioning the points of difference which exist in the relations of the common carotid on the opposite side of the neck.

44. Give an account of the Hypoglossal Nerve from its origin to the point at which it emerges from beneath the posterior belly of the digastricus. 2nd. Commencing the dissection at the integuments, describe the parts as they are severally brought into view in tracing the course of the nerve from the point mentioned to its termination, and also that of the Lingual Artery and its Branches.

45. Describe the parts (including the bones and ligaments) met with in dissecting the posterior region of the neck; the dissection to be carried as far as the vertebræ and posterior aspect of the scalenus posticus muscle, being limited below by the first rib, laterally by the outer edge of the scalenus posticus and point of the mastoid process, and above by the line of insertion of the sterno-mastoid muscle and superior curved ridge of the occipital bone.

46. What is the mode of development of the frontal and occipital bones, and in what condition are these bones at birth?

47. Describe the Cartilages of Larynx, and their *mode of connection* with each other.

48. Give the anatomy of the Corpus Striatum, describing its situation and immediate connections, and the arrangements of the white and grey matter within it (as seen with the naked eye). Describe also the parts met with in exposing the corpus striatum from the outer and lower part of the cerebral hemisphere.

49. The bones of the face and the ethmoid being removed, describe that portion of the basis of the Cranium included between the superciliary ridges of the frontal bone in front, a line extending between the mastoid processes, and in front of the condyles of the occipital bone, behind, and laterally between the lines drawn from the external orbital processes of the frontal to the mastoid processes. First mention the bones, and those portions of them which enter into the formation of the part to be described; then commence the description at the superciliary ridges, and describe the surfaces, sutures, processes, and foramina, in the order in which they are met with, mentioning the muscles when describing the parts to which they are attached.

50. Commencing the dissection at the integuments, and proceeding with it as far as the pharynx, and the bones forming the zygomatic fossa, describe the parts successively exposed in dissecting the space bounded above by the zygoma, below by the base of inferior maxilla, in front by the anterior margin of the *masseter*, and behind by the meatus auditoriu

mastoid process, and upper part of the sterno-cleido-mastoideus.

51. Describe that portion of the side and basis of the skull which is bounded in front by the orbital process of the frontal bone and by the posterior surface of the malar bone; behind by a vertical line passing behind the mastoid process to the posterior part of the condyle of the occiput; superiorly by a horizontal line passing over the squamus suture, and internally by the mesial line. Commence the description at the upper limit, and mention the parts in the order in which they are seen in proceeding towards the mesial line.

52. Describe the parts met with in dissecting the branches of the Portio-Dura of the seventh pair of nerves after they have emerged from the Parotid Gland.

53. Describe the intrinsic muscles of the Larynx, mentioning their actions and explaining the chief uses to which they are subservient. Describe also the distribution of the Laryngeal Nerves, and state what is believed to be their respective functions.

54. Give a description of the Dura Mater; including its intimate structure, its extent and connections in the cranium and vertebral canal, its relations to the cranial and spinal nerves, the arteries which supply the membrane with blood, and the venous sinuses contained in it.

55. Describe the structure and connections of the

Tongue, and the blood-vessels and nerves distributed to it. Enumerate its principal movements and the muscles producing them, and state what are the most probable functions of its different nerves.

56. The head being divided by a vertical section in the median plane, and the dissection being commenced from the inside of the pharynx and fauces, and carried outwards to the integuments, you are required to describe in their order the parts that would be successively met with in so dissecting a space marked as follows:—above, by the zygoma, the body of the sphenoid and basilar process of the occipital bone; below, by the base of the inferior maxilla and great cornu of the os hyoides; behind, by the meatus auditorius, the mastoid process and the upper part of the sterno-mastoid, and anterior vertebral muscles; and before, by the anterior border of the masseter and tuberosity of the superior maxillary bone, so as to include the pterygo-maxillary fissure and posterior palatine canal.

57. Commencing at the integuments, give the dissection required to display—*First.* The course of the external Carotid Artery from its commencement to its division into internal maxillary and temporal arteries, pointing out its relations to other parts. *Secondly.* The course of the Lingual Artery and its branches, describing all the parts met with in the course of the dissection.

58. Give the anatomy of the Nose, describing its

bony parietes, its cartilages, the different orifices communicating with its cavities, its lining membrane, its blood-vessels and nerves.

59. Give an account of the form, situation, and internal structure of the Trachea and of the Bronchi as far as the point where they enter the lungs, describing their relations to adjacent parts.

60. The roof of the orbit being removed, describe the parts contained in that cavity in the order in which they are met with in dissecting them from above. The answer to include a description of the eyelids and lachrymal sac, but not of the eye-ball.

61. Give the dissection required to show the origin, course, and distribution of the Occipital Artery, describing the several parts exposed in the dissection.

62. Commencing at the integuments, describe the parts brought into view in exposing the spinal Accessory Nerve, from the point where it escapes from beneath the digastric muscle to its termination.

63. The malar, superior maxillary, nasal and inferior turbinated bones being removed on one side, describe the remaining walls of the orbit, and those parts of the skull brought into view by the removal of the bones as far back as the posterior margin of the external pterygoid plate. Commence at the superciliary ridge, and describe the surfaces, sutures, fissures, and foramina, in the order in which they are met.

64. The whole of the Brain, excepting the pituitary body, being removed, together with the intracranial part of the olfactory nerves; describe the parts which remain in the anterior and middle fossæ of the base of the cranium, commencing at the posterior limit, and describing them in the order in which they would be exposed; the description to include the surface of the bones.

65. Describe the parts (except the bones and ligaments) met with in dissecting the posterior region of the Neck; the dissection to be carried as far as the vertebræ and the posterior aspect of the scalenus posticus muscle, being limited below by the first rib, laterally by the outer edge of the scalenus posticus and the point of the mastoid process, and above by the superior curved ridge of the occipital bone.

66. Commencing the dissection at the integuments, describe the parts brought into view in exposing the Omo-Hyoideus from the point at which it emerges from behind the clavicle to its insertion.

67. Give an account of the structure and arrangement of the Choroid Coat and Iris; mentioning briefly the uses assigned to these parts of the organ of vision.

68. Give an account of the cervical portion of the vertebral column, pointing out the characters which distinguish the several parts of the bones of this region from the corresponding parts in the dorsal ar

lumbar regions; and describe especially the Atlas and Dentata. Enumerate the ligaments, and mention the movements which take place in this region, including those between the Cranium and the Atlas, and between the Atlas and the Dentata.

69. Describe in their order of position the parts which would be brought into view in dissecting the origin and course of the phrenic and recurrent nerves on the right side of the neck. The phrenic to be traced only as far as the first rib, and the recurrent to the lower border of the larynx.

70. Give an account of the Tympanum of the Ear; comprehending a description of its osseous parietes, and of the parts contained in it in the recent subject.

71. The Pharynx being opened posteriorly in the middle line and its whole length, describe the parts brought into view in the order in which they are seen from the basilar process to the lower margin of the cricoid cartilage. The mucous membrane being removed, describe the parts then exposed. The answer to include an account of the form and structure of the soft palate and its arches, the tonsils, and the interior of the Larynx.

72. State the steps of the dissection required to display the Facial Artery and its branches (except the palatine and tonsillar), mentioning the other parts exposed in the dissection; and pointing out *their relation to* the vessels in question.

73. Describe the parts seen on the surface of a section of the brain made in the median line.

74. Describe the osseous labyrinth of the human ear, with the meatus auditorius internus and other passages immediately communicating with the cavities of the labyrinth.

75. Describe the form, situation, and connections of the Thyroid gland.

76. Give a description of the eyelids, the conjunctival membrane, the lachrymal gland, and the lachrymal passages.

77. Describe, in the order in which they would be met with, the parts brought into view in fully exposing by dissection the anterior surface of the Scalenus Anticus muscle.

78. Give an account of the cartilages of the Larynx, their articulations with each other, and the ligaments connecting them. What difference of internal structure is observed among the different cartilages and ligaments of the Larynx?

79. Give a description of the form, dimensions, and structure of the Trachea.

80. Describe the Inferior Maxillary Bone; its mode of ossification and the changes which it undergoes at different periods of life. Describe also the Articulations of the Lower Jaw, and its movements, mentioning the muscles by which they are severally effected.

81. State the dissection required to show the course of the Deep Cervical Artery on the posterior aspect of the vertebræ, commencing with the integuments on the back of the neck, and describing the several parts exposed, in the order in which they appear in the dissection.

82. Describe, in the order of their appearance, and as far as they would necessarily come into view, the parts that would be met with in fully exposing by dissection the Stylo-pharyngeus Muscle.

83. Give an account of the structure of the Human Eye-ball: compare the structure of the Eye with that of the Ear.

84. Give the dissection required to expose the Recti and Obliqui Capitis Postici. Describe these and the other muscles exposed, with their attachments as far as seen within the limits of the dissection, and explain their several actions. Mention also the vessels and nerves met with in the course of the dissection.

85. Give an account of the Organ of Hearing, describing the Pinna and the Meatus, their muscles, nerves, cartilage and ligaments; the Tympanum and its contents, with the Eustachian tube; and the osseous portion of the Labyrinth.

86. Give the dissection required to display the origin, course, and distribution of the occipital artery; commencing with the integuments, and de-

scribing in the order of their appearance the several parts exposed in the dissection.

87. Describe the parts (except the bones) met with in dissecting the posterior region of the neck; the dissection to be carried as deep as the vertebræ, and the posterior surface of the scalenus medius muscle—being limited below by the first rib, above by the superior curved ridge of the occipital bone, and laterally by the point of the mastoid process, and the outer border of the scalenus medius.

88. The head being divided by a vertical median section, and a dissection commenced from the inside of the pharynx and fauces, and carried outwards as far as the integuments, you are required to describe, in the order in which they would present themselves, the parts which would be met with in such a dissection, supposed to be limited as follows:—above by the zygoma, the body of the sphenoid, and the basilar process of the occipital bone; below by the hyoid bone; behind by the meatus auditorius and the mastoid and anterior border of the masseter and tuberosity of the superior maxillary bone, so as to include the pterygo-maxillary fissure and posterior palatine canal.

89. Describe the external configuration and the position of the Teeth of the adult, and their internal structure so far as it can be discerned with the naked eye.

90. Give an account of the structure of the temporo-maxillary articulation and the movements of which the lower jaw and its condyles are susceptible, mentioning the muscles by which these movements are effected. Point out any provisions in the construction or in the attachment of muscles which are calculated to allow freedom of motion, or to maintain security of connection. Describe also the condition of the lower jaw in the new-born infant, its manner of growth, and the changes it undergoes at subsequent periods of life.

91. Mention the parts seen in exposing the sterno-cleido mastoid muscle, describing them and their relative position in detail, but only so far as they must be necessarily seen; describe similarly the subjacent parts which come into view when the muscle is raised. Lastly, give a full description of the muscle and its actions.

92. Describe the order in which they would appear, the parts met with in fully exposing the anterior surface of the Scalenus Anticus.

93. Describe those portions of the facial bones which enter into the formation of the lachrymal passages. Give an account of the structure of the eyelids, the form and position of the Lachrymal Gland, and its ducts, the puncta, lachrymal sac and duct.

94. The upper and posterior parts of the Cere-

brum, the Corpus Callosum, the Fornix, and the Velum having been removed, and the fourth ventricle laid open by a vertical incision through the middle of the Cerebellum; describe the parts thus exposed, commencing at the fore part.

95. The Pharynx having been opened at its back part, describe the soft Palate, its Pillars and the Tonsils, the Isthmus faucium, the base of the Tongue, the Epiglottis, the superior aperture and the interior of the Larnyx, as seen without opening it.

96. Describe the parts met with in dissecting the Spinal accessory nerve, from the point where it escapes from beneath the Digastric muscle to its termination.

97. The roof of the cranium having been taken off by a section, passing about an inch above the orbits and occipital protuberances, and the whole of the encephalon, except the pituitary body, having been removed, together with the intracranial part of the olfactory nerves; describe the remaining portion of the dura mater, the nerves, and the other parts in the base of the skull, including the surfaces of the bones. The description to be commenced anteriorly.

98. Give an account of that portion of the basis of the cranium which is bounded in front by a line drawn across the tuberosities of the superior maxillary bones (so as to include the pterygo-maxillary-fossa),

behind by a curved line passing from the apex of the mastoid process of one side, behind the Foramen Magnum, to that of the other side, and laterally by the margin of the Meatus Auditorius Externus and the Zygoma. Commencing in front, mention them in the order in which they are seen, the bones and sutures, the foramina and the structures occupying them, and the surfaces for the attachment of muscles.

99. Commencing at the integuments, give the dissection required to expose the submaxillary gland and its duct, and the sublingual gland, describing briefly the parts met with in the course of the dissection. The answer to include an account of the form, size, position, and structure of these glands.

100. Describe the origin and course of the branches of arteries, veins, and nerves, which are supplied to the hairy scalp.

101. Give an account of the muscular attachments of the Tongue, and of the action of each muscle you describe.

102. State the steps of a dissection needed in an entire Brain to show the *hippocampus* minor, the *hippocampus major*, and the eminentia *colateralis* or *pes accessorius.* Describe the situation, characters, and construction of those bodies.

103. Give with precision the origin, insertion, and use of the Recti muscles of the head.

104. With a fresh Temporal bone, state how you would proceed to lay bare the muscles of the ossicles

of the Tympanum. Conduct the dissection in such order as to insure a sight of all the muscles on the same preparation. Describe each muscle as the dissection shows it, and give the separate and combined actions of each.

105. The cerebellum, tuber annulare and medulla oblongata being removed, describe the under surface of the cerebrum, including the vessels and nerves, and the parts necessarily seen in exposing the under surface of the corpus callosum in its whole length.

106. Describe—(a) the Position; (b) the Length and Thickness; (c) the Relations; (d) the Connections; (e) the minute Structure of the Corpus Callosum.

UPPER EXTREMITY.

1. Describe the course and relative position of the Brachial Artery. Name the branches it gives off, and trace the Profunda branch to its termination.

2. Describe the position, shape, and attachments of the Deltoid Muscle. Name the different structures which are exposed on reflecting the Deltoid from its attachments to the Scapula and Clavicle.

3. The Thumb.—Describe the position of the Thumb, its bones, its articulations, its capability of motion, and the muscles by which its movements are effected.

4. Describe the position and attachments (origin and insertion) of the Biceps Flexor Cubiti, the Brachialis Anticus, the Supinator Radii longus and brevis, the Pronator Radii Teres, and Pronator Quadratus. Mention the precise action of each muscle, and the nerve by which each is supplied.

5. State what muscle separates the Teres Minor from the Teres Major ; describe the spaces left between the three muscles, and the vessels and nerves which pass through the spaces in question.

6. Give the course, relations, and distribution (including anastomoses) of the ulnar artery.

7. Enumerate the structures divided in amputation of the Elbow-joint.

8. Describe the course of the Brachial Artery, pointing out its relative position with respect to the contiguous muscles, nerves, and veins.

9. Describe the course and relations of the Brachial Artery ; and state how the circulation is carried on when it is tied in the middle of the arm.

10. Describe the dissection required to expose the Boundaries of the Axilla and its contents. Mention particularly the relative position of all parts of importance contained within; and state how these relations may be influenced and altered by a dislocation of the Head of the Humerus downwards below the Glenoid Cavity.

11. Describe the Clavicle, the joints it assists in forming, and the means by which this bone is kept

in its normal position. What muscles are attached to the Clavicle?

12. Describe the structure, attachments, and uses of the anterior Annular Ligament of the wrist-joint. Enumerate the parts passing under it, and mention their relative position.

13. Describe the carpo-metacarpal, the metacarpo-phalangeal, and the phalangeal joints of the Middle Finger; mention the movements possessed by each of these joints, and the muscles which are engaged in each movement.

14. Describe the connection between the Radius and the Ulna—namely, the osseous surfaces of the joints, with the ligaments and membranes. Also state the kind of movement which the Radius describes at its upper and its lower end.

15. The whole of the Pectoralis major being removed, mention the various parts exposed, and their relative position.

16. What muscles of the Fore-arm receive branches from the following nerves—median, ulnar, musculo-spiral, and posterior interosseous?

17. What nerves enter into the formation of the Brachial Plexus? Name its branches.

18. Describe in their order the parts you would meet with in dissecting from the integuments of the neck to the posterior surface of the scapula and teres major muscle.

19. *Give an* account of the principal arterial

inosculations which exist in the limbs, in those of the shoulder and hip.

20. Describe the steps of the dissection requi display the course of the Radial Artery, fro origin to the point at which it disappears bet the metacarpal bones of the thumb and fore-fi and of the branches given off in this part o course.

21. Give an account of the joints formed by Radius and Ulna with other bones, and with ea other; the answer to include a description of t articular surfaces of the several bones, and of th cartilages, synovial membranes and ligaments. Describe the movements which take place in these joints, mentioning the muscles by which they are effected, and the classes of joints to which they belong. In what respects do the movements which take place in these joints differ from those which take place in the corresponding joints of the leg.

22. Give the dissection required to expose the Subscapular Artery and its branches, describing the parts met with in the dissection, as far as they are necessary, and brought into view.

23. Give an account of the articulations of the scapula with the clavicle and Humerus, describing the articular surfaces, the ligaments, the synovial membranes, and the articular cartilages, and the proper ligaments of the scapula. Describe the movements which take place in these joints, and also

those of the Sterno-Clavicular articulation, mentioning the muscles by which they are severally effected.

24. Commencing at the integuments, state the dissection required to show the course of the Radial Artery, from its origin at the bend of the elbow to the termination of the deep palmar arch. Describe the relations of the artery to the structures in the different parts of its course, and mention the branches in the order in which they arise, but describing the course of those branches only which are necessarily seen in the steps of the dissection required to expose the main artery.

25. Commencing at the integuments, describe the parts met with in dissecting a portion of the front surface of the Arm and Fore-arm, bound above by a transverse line drawn three inches above the bend of the elbow, and below by a line crossing the insertion of the pronator teres. The dissection to be carried to the bones.

26. Give the dissection required to bring into view the origin, course and distribution of the Transversalis Humeri (supra-scapular) and Transversalis Colli Arteries, describing the situation, relatively to the Arteries and to each other, of the several parts which must be exposed in the dissection.

27. Give the dissection required to display the Supinator and Extensor Muscles on the Fore-arm and back of the Hand; describing, in the order in *which they would* be exposed, the muscles, fasciæ,

and ligaments, as well as the vessels and nerve
with in the dissection.

28. Describe the parts situated on the palma
pect of the Hand in the order in which they pre
themselves in dissection.

29. State the dissection required to display
Musculo-spiral Nerve and its branches from t
point where it leaves the axilla to the wrist; me
tioning the different parts exposed in the proces
and describing their situation relatively to the nerv
and to each other. The attachments of the muscle
not to be given.

30. Give the anatomy of the elbow-joint, describing the articular ends of the bones, the ligaments and the synovial membrane. Mention the movements which take place at this articulation, and the muscles by which they are effected.

31. Give a description of the distal row of the carpal bones, and their articulations with each other and with neighbouring bones, mentioning the points of attachment of muscles.

32. Describe the several parts which would be brought into view in dissecting and removing the short muscles of the thumb and abductor indicis.

33. Describe the lower extremities of the Radius and Ulna, and those bones of the Carpus which are articulated with them, mentioning the grooves for the passage of tendons. Describe the wrist-joint, its cartilages, synovial membranes and ligaments, men-

tioning the structures which are in contact with it. To which class of joints does the wrist-joint belong? What movements take place in it, and by what muscles are they severally effected?

34. Describe, in the order in which they appear in dissection, the parts situated in the lower half of the arm, and in the fore-arm. The dissection is to be limited above by the insertion of the deltoid muscle, and below by the lower ends of the radius and ulna. The bones are not to be described, and the elbow-joint is not to be opened.

35. Describe carefully the parts, except the bones, which would be seen in dissecting the two innermost fingers, and corresponding part of the hand; the portion dissected being such as would be separated from the rest of the hand by an incision carried along the middle of the interosseous space between the ring and the middle fingers, and continued through the carpus as far as the wrist-joint.

36. Describe in the order of their appearance the parts which would be successively brought into view in fully exposing by dissection the anterior surface of the Pronator Quadratus.

37. Give the dissection required to expose the parts occupying that portion of the back of the hand which is included between the Extensor Primi Internodii Pollicis, and bounded above by the posterior annular ligament, including the interossei muscles, seen in the space.

TRUNK.

1. What are the attachments, disposition, c nections, and function of the *Levatores* and *Sphinc Ani?* Describe especially the endowments, muscu and nervous, by which the Sphinctor Ani is fitted f its office, and how far its agency is voluntary, involuntary, or of a mixed character.

2. Describe the course of the *Urethra*, its dilatations and contractions, its structure, and the excretory ducts which open into it.

3. Describe the *Ovaries* and *Fallopian Tubes*, in respect of their form, situation, attachments, structure and function. State also what is meant by a *Corpus luteum.*

4. Describe the origin, course, and relations of the Subclavian Artery, on each side, and enumerate its branches.

5. Describe the situation, connections, and actions of the Heart.

6. State the total number, and the number of each division of the Spinal Nerves; describe the manner in which they emerge from the Vertebral Column, and in which the separate roots are connected with each other, while situated within the vertebral canal.

7. Name, in their order from without inwards, the tructures which fill the space between Poupart's igament and the Pelvic bone.

8. Describe the position and the boundaries of the Femoral Ring; and name the Blood-vessels which are close to it, mentioning their position with respect to the ring.

9. State the position of the Coeliac Axis, name its branches, and describe their course and distribution.

10. Describe the arch of the Aorta, and its relations to the contiguous structures. Name the vessels which arise from it, and describe their course as far as the upper opening of the chest. State the principal irregularities which occasionally occur in the origin and course of these vessels.

11. Describe the structure of the Placenta, and the mode of its attachment to the Uterus. Describe the circulation of the blood through the Placenta between the Mother and the Fœtus.

12. Describe the situation, attachments, and structure of the Urinary Bladder. Mention the portions of the Bladder which are not covered by Peritoneum, and the structures with which those portions are contiguous.

13. Mention the muscles which enlarge the Capacity of the Chest during ordinary Inspiration. Explain the mode by which ordinary Expiration is effected.

14. Describe the coverings of the Testicle. Mention the different structures which compose the Spermatic Cord; and state whence they are derived, and *where they* terminate.

15. Describe the course and relations of the common iliac artery.

16. Describe the constituents of the roots of lung on either side, in their several relations to e other, and to the neighbouring parts; and state the mode of distribution within the lung.

17. Describe the shape and structure of the Trachea, Bronchial Tubes, and Air Cells.

18. Describe the Cœcum Caput Coli, and add an account of the action of the ileo cœcal valve.

19. The Abdomen being open, but the contents undisturbed, specify by what dissection the part of the *inferior vena cava* below the liver may be laid bare without the removal of any of the viscera from the body. Give the topographical anatomy of the *inferior* cava. Mention the veins from which it receives blood, their place of union with the trunk, and the difference in their mode of termination on the right and left sides.

20. Describe the naked-eye characters of transverse sections of the spinal cord in the cervical and lumbar enlargements, and in the middle of the dorsal region.

21. Describe the anatomical composition of the Spermatic Cord; its connections in the wall of the abdomen, and the coverings which it derives from that wall.

22. Describe the dissection which would be needed

to bring into view the internal Mammary Artery and Vein with their branches, and the anastomoses of the several branches.

23. Describe the steps of the dissection necessary to lay bare the Brachial Plexus in the neck and axilla. Trace out those branches of the plexus which are distributed to muscles attached by one end to the scapula. The branches of the plexus are to be afterwards stated; but without further description.

24. Describe the dissection of the triangular space of the Abdominal Wall that is bounded above by a line drawn from the anterior superior spine of the Ilium to the Umbilicus, below by Poupart's Ligament, and to the inner side by the Mesial Line of the Body. State what forms of Hernia may be met with in this space, and how they differ anatomically from one another.

25. What is the nature of the muscular structure of the Heart? How is it covered externally and internally? Give the course of the blood-vessels of the heart itself. Describe and explain the sounds of the healthy Heart.

26. Where are the Testicles situated in early fœtal life? Describe by what agencies they are conveyed into the scrotum. What are their coverings in the belly, and in the scrotum? and whence are these coverings derived? Where do the arteries of the Testicles arise, and where do the veins terminate?

27. Describe the structure of the Lobule of a Lung.

28. Describe the form and position of the Pancreas, and its relations to contiguous parts. Describe its structure and uses, its blood-vessels, nerves, and ducts.

29. Describe the structure of a single Lobule of the Liver. Enumerate the Constituents of Bile; and state the effects it has on digestion.

30. Into what Regions is the Abdomen divided? State the boundaries of each Region, and the structures which are situated within it.

31. Describe the First Rib, its form, position, and degree of mobility. In what respects does this Rib differ from all the others? What muscles are attached to, and what great vessels are in contact with its upper surface?

32. Describe the changes which take place in the form and capacity of the Thoracic Cavity during ordinary inspiration; and state by what agencies these changes are effected.

33. Describe the structure of an Adult Testicle, and trace its excretory duct from its commencement to its termination.

34. Describe the course and relative situation of the External Iliac Artery in the male adult. Describe also the Epigastric branch of this artery; its origin, course, and anastomotic communications; mention also its relative situation with respect to

the Internal and to the External Abdominal Rings, and to the Inguinal Canal.

35. Describe the structure of the Kidney, the characters and chemical composition of Healthy Urine, and how this secretion contributes to maintain health.

36. Describe the peculiarities of the first and last Dorsal Vertebræ.

37. Describe the mechanism of the Circulation of the Blood between the Heart and the Lungs, to and fro; and the changes the Blood undergoes in its passage through the Lungs.

38. Give the arrangement and structure of the Membranes of the Spinal Cord.

39. Describe the dissection required to expose the under surface of the Prostate, and the exact relations of this structure to surrounding parts; and state in what surgical operations it is implicated, and to what extent.

40. Name and describe the course of the Branches of the Internal Iliac Artery; and mention the principal anastomoses between them and the other arteries in their vicinity.

41. Where is the Great Cardiac Plexus situated, and what nerves enter into its formation?

42. What veins open into the inferior or ascending Vena Cava?

43. Name the parts connected with the anatomy

of Inguinal Hernia, as well as the boundaries of t spermatic cord.

44. Describe the triangular ligament of the urethra; and the muscles connected with the membranous part of the urethra.

45. Describe the ligamentous articulations of the pieces of the sternum with each other, with the costal cartilages, and the clavicles.

46. Into what parts is the urethra of the male divided? What names are applied to those parts? and what is the length of each part?

47. Describe the situation, form, and structure of the Kidney.

48. Give an account of the Diaphragm and its uses, mentioning the muscles which act in contact with it. Describe the origin, course, and distribution of its vessels and nerves.

49. Give the anatomy of the Prostate Gland, describing its form, size, situation, connections, and structure, with the part of the urethra which passes through it.

50. Describe the position and structure of the Heart and Pericardium. Give a brief account of the passage of the blood through the cavities of the heart, and of its entrance into the Aorta and pulmonary artery; and of the contractions, impulse and sounds of the organ.

51. Commencing at the integuments, give an account of the parts successively exposed in the dissec-

tion required to display the structures entering into the formation of the Inguinal and Femoral Canals; the answer to include a description of the appearances seen on the inside after removing the peritoneum; with an account of the spermatic cord, and of any varieties in the origin and course of the obturator artery which relate to the subject of the question.

52. Describe the parts met with in dissecting a portion of the posterior region of the trunk, included within three lines corresponding to the borders of the latissimus dorsi muscle; the dissection to be carried down to the vertebræ and quadratus lumborum.

53. Give an account of the structure and properties of Mucous membrane in general; and describe that of the stomach, and of the small and large intestines in particular; the description to include an account of the ultimate arrangement of the blood-vessels, the epithelium, the follicles of Lieberkühn and the Glands of Brunner and Peyer.

54. Give the anatomy of the Rectum; describing the structure, form and situation of the intestine, its blood-vessels and nerves, and its relations to the Peritoneum and other adjacent parts in the two sexes.

55. State the dissection required to expose from the interior of the abdomen the obdurator and epigastric arteries, the former from its origin to its entrance into the obturator foramen, the latter as far as the point where it becomes concealed by the sheath of the *rectus muscle*. Describe the parts brought into

view in the dissection, the chief variations to which the vessels in question are subject, and the relations of their vessels to the inguinal and crural apertures.

56. In what respects do Congenital, Oblique, and Direct Inguinal Herniæ differ from each other with regard to their mode of formation, and their relations to the Inguinal Canal, the spermatic cord, and the Epigastric Artery.

57. Give a description of the Stomach, including its form, dimensions, relative situation and connections, the nature and arrangements of its several coats, with the glands which open on its inner surface; the construction of its pyloric orifice, and the situation and mode of distribution of the vessels and nerves of the organ. Mention the leading constituents and most characteristic properties of the Gastric Juice, and describe briefly the changes which the food undergoes in the stomach.

58. The abdominal muscles and the ossa pubis being removed, describe the Pelvic Viscera as they are seen *in situ* in the male; and opening the bladder, and the urethra through its whole length, describe the dimensions of the latter in its different portions, and the internal surface of both, and also the appearances of the surface of the divided cavernous and spongy bodies. Continuing the dissection from above downwards as far as the rectum, describe the parts situated between it and the bladder.

59. Give an account of the Dorsal Region of the

Vertebral Column, mentioning the characters by which the vertebræ of that region differ from those of the neck and loins, as well as the marks by which certain dorsal vertebræ may be distinguished from the rest. Describe also the several articulations and ligaments by which the dorsal vertebræ are connected with each other and with the ribs.

60. Describe the construction and explain the mechanism of the different Valves placed between the auricles and ventricles of the heart, at the orifices of the Aorta and pulmonary artery, and in the veins. What veins are known to be destitute of valves?

61. Give a description of the Cœcum and of the Ilio-colic Valve, and state the differences in point of structure between the great and small intestines.

62. The walls of the abdomen being removed, describe the Lesser Omentum and Glisson's Capsule, their attachments and contents; the position and boundaries of the Foramen of Winslow, and the position of the Duodenum and Pancreas, and their relations to other parts.

63. Describe the external configuration and internal structure of the Testis, the composition of the spermatic cord, the blood-vessels, lymphatics and nerves belonging to these parts, and the nature and arrangement of their coverings; the description to be limited above by the external abdominal ring.

64. Give a brief account of the system of the Vena Portæ, mentioning its condition in the fœtus, the

changes which take place after birth, and many points in which it resembles or differs from the general venous system; and the walls of the abdomen being removed, describe the steps of the dissection required to expose the course of the Splenic Vein, the terminations of the Inferior and Superior Mesenteric Veins, and the trunk of the Portal Vein as far as its entrance into the Liver; mentioning the relations of those veins to other parts.

65. Describe the situation, connections, form, and structure of the Uterus, Vagina, Fallopian Tubes, and Ovaries, with their vessels and nerves.

66. Give an account of the Inguinal and Femoral canals, describing their orifices, boundaries, and contents; and give the origin and the course of the Epigastric Artery, the varieties in the origin and course of the Obturator, and the relations of these vessels respectively with the canals. Explain the mode of formation of Congenital and of the other forms of Hernia which occur in this region.

67. Describe the inferior surface of the Liver, mentioning the parts with which it is in relation. Give an account of the form, situation, and structure of the Gall bladder, and ducts, and describe the vessels as far as seen outside the liver; mentioning their condition at the time of birth, and the changes which they undergo afterwards. Explain the circulation of blood through the Liver.

68. Give a description of the form, relative situa-

tion, connections, and structure of the Bladder and Prostate Gland.

69. Give an account of the structure, course, and connections of the Large Intestine, from its commencement to its termination, describing the Ilio-colic Valve, and noticing specially, the points in which the large differs from the small intestine. In your account of the Rectum, describe its relations to the adjacent parts in the two sexes.

70. Describe the parts seen in the auricle and right ventricle of the Heart. Mention the peculiarities of the heart and pulmonary artery of the Fœtus.

71. Give a description of the oblique, transverse, and straight muscles of the abdomen; and explain their actions and uses.

72. Describe, in the order in which they lie, the parts which are seen in dissecting these muscles; the dissection being carried down to the surface of the transversalis and posterior wall of the sheath of the rectus, and being limited behind by the outer border of the quadratus lumborum.

73. Give the anatomy of the Duodenum; comprehending a description of the form and situation of that intestine, its relations to adjacent parts, the blood-vessels and nerves distributed to it, the structure and arrangements of its coats, and the points in which it differs from the Jejunum and Ilium.

74. Describe the external configuration and the internal surface of the auricles of the heart.

75. Give an account of the general characters of the ribs, the characters by which certain ribs are distinguished from the others, and the articulations of these bones with the Vertebral Column. Mention the muscles chiefly engaged in the elevation and depression of the ribs.

76. The Heart being removed, and the dissection commenced at the back part of the Pericardium, describe the parts met with behind that membrane, in front and at the sides of the spine, as far as the commencement of the internal intercostal muscles.

77. The anterior wall of the abdomen being removed, give an account of the dissection required to show the course of the Gall ducts from the Liver to the Duodenum, and the position and relations of the Duodenum and Pancreas, mentioning all the parts necessarily seen in the course of the dissection. Give a description of the Pancreas, comprehending its form, dimensions, weight, connections, and internal structure.

78. Describe the situation, connections, form, and structure of the Uterus, Vagina, Fallopian Tubes, and Ovaries, with the vessels and nerves pertaining to these parts.

79. Describe the Sacrum and Fifth Lumbar Vertebra, and their mode of connection with each other and with adjacent bones; mentioning the points of attachment of muscles.

80. Commencing at the skin of the Perinæum,

give the dissection required to expose as much of the Levator Ani as can be seen in this situation, describing the parts in the order in which they occur.

81. In what respects do the heart and great vessels of the Fœtus differ from their condition in after life?

82. Describe the nature of the Spleen; enumerate the other organs which more or less resemble it, and state in what classes of animals a spleen is found.

83. The bladder and the parts of generation of the male having been removed from the body, and the bladder opened in front, and the urethra along its upper part, describe the internal surface of these parts, and the surface of the section of the Corpus Cavernosum. Then, turning to the lower surface of the same parts, describe the bulb and its structure, and the parts behind it.

84. Give a description of the tenth, eleventh, and twelfth dorsal vertebræ, and of their articulation with the ribs and other vertebræ.

85. The abdomen having been opened, give the dissection required to expose the Duodenum and Pancreas, and give an account of the position, form, and relations of these organs, with their blood-vessels. Then, opening the Duodenum, describe its internal surface, and mention in what respects that differs from the internal surface of the Ilium, and of the large intestine. Having removed the Duodenum

and Pancreas, describe the parts which lie immediately behind them.

86. The abdomen having been opened, and the peritoneum removed from its anterior wall, describe the inner orifices of the Inguinal and Crural canals, their form and position, the relation of the Epigastric Artery to the former, and the occasional relation of the Obturator Artery to the latter. Pursuing then the dissection from within outwards, describe the parts entering into the formation of the Inguinal Canal, mentioning its length, direction, and contents.

87. The abdomen being opened, give the steps of the dissection required to expose the Splenic Vein, and the Portal Vein from its commencement to its entrance into the Liver, mentioning the size, length, and direction of these veins. The answer to include an account of the position, form, and relations of the Pancreas and Duodenum, and of Glisson's Capsule and its contents.

88. Give a description of the Spinal Cord (not including the Medulla Oblongata) comprehending its external configuration, its internal structure, so far as visible to the naked eye, and its envelopes. Describe also the spinal nerves as far as the junction of their anterior and posterior roots, together with the blood-vessels contained within the vertebral canal.

89. Describe the characters of the spinous, transverse, and articulating processes of the vertebræ in *the different regions* of the spinal column, distin-

guishing any which are unlike the rest in the region to which they belong. State the mode of ossification of a lumbar vertebre.

90. Describe the parts seen in dissecting the Scrotum, and in exposing the Testicle and Spermatic Cord as high as the external abdominal ring Give an account of the parts of which the spermatic cord is formed, and of the form, coverings, and outward relations of the testicle.

91. State the steps of a dissection suited to expose the internal mammary artery and its branches in their whole extent, mentioning the situation (but without detailed description) of the parts which require to be dissected or removed in the process. Then describe fully the origin, course, and distribution of the artery, its relations to adjacent parts, and its anastomoses with other vessels.

92. Describe, in the order of their appearance (but only as regards their extent and situation) the parts which would present themselves in the dissection of a space bounded by the spines of the lumbar vertebræ, and by a line drawn parallel to them from the twelfth rib to the crest of the Ilium; the dissection to be carried as far as the posterior surface of the quadratus lumborum.

93. State the peculiarities of the heart, blood-vessels, and liver of the mature fœtus, by which these organs differ from their condition in the adult.

94. Describe the articulations of the sacrum with *other bones.*

95. Describe the position of the different Anastomoses between the branches of the internal iliac and femoral arteries.

96. The chest having been opened in the ordinary way for the dissection of its contents, the lungs cut away near their roots, and the heart and pericardium removed, state the steps of a dissection which will expose the Thoracic Duct from the diaphram to its termination.

97. Describe the dissection of the posterior primary branches of the Sacral Nerves in this manner:—Begin with the most superficial offsets, and carry the dissection downwards as far as the common trunks from which the anterior and posterior primary branches spring, so as to show, from without inwards, each fact in the anatomy of the nerves and their branches.

98. In a body with the abdomen open and the viscera above the pelvis removed, but with the pelvic viscera untouched, state how you could bring into view, on the right side, the Internal Iliac artery in the female, and each of its branches within the pelvis.

99. Compare the anterior primary branch (intercostal) of the Second Dorsal nerve, with the two abdominal branches—ilio-hypogastric and ilio-inguinal—of the First Lumbar nerve, and point out the resemblances and differences between them in course, connections, and branches.

LOWER EXTREMITY.

1. Describe the parts situated on the middle and back part of the Leg, in the order in which they appear on dissection.

2. In what state of the limb is the partial rotation of the Tibia upon the Femur possible, and by what muscles is it effected?

3. What are the boundaries of the Popliteal space? What are the actions of the Ham-string Muscles? And what is the relative position of the great Vessels and Nerves contained in the Ham?

4. State precisely the terminal attachments of the crucial ligaments and semi-lunar fibro-cartilages of the knee-joint; and specify the attachments of the ligamentous bands connected with the fibro-cartilages.

5. Describe the astragalo-scaphoid and calcaneo-cuboid articulations of the Foot. Afterwards, describe the muscles which produce inversion and eversion of the foot, through movements of those joints.

6. What dissection is necessary to expose the several arteries at the back of the lower limb, between the crest of the Ilium and the knee-joint? Enumerate those arteries, and mention their respective anastomoses.

7. Describe the parts met with, and their relations

to one another, in the dissection of the Ham down to the bones, in a space extending from four inches above to two below the knee-joint.

8. Give the attachments of the Glutæus maximus, all the peculiarities of this muscle, and its functions. How is it supplied with blood and nerves?

9. Describe the Semilunar Cartilages of the knee-joint; their structure, form, attachments, uses, and mode of action.

10. What are the ligaments of the knee-joint?

11. Name the muscles that are attached to the Ilium.

12. Describe the ligamentous articulations of the astragalus and os-calcis with the scaphoid and cuboid bones.

13. What movements are admitted in these joints?

14. What muscles are engaged in the different movements of these joints?

15. The dissection of the trunk of the peroneal artery and its branches, and the anastomoses with other vessels.

16. Describe the Patella, the lower extremity of the Femur, and the upper extremity of the Tibia. State the dissection required to display the several structures constituting the knee-joint, *mentioning* the parts met with in the dissection, and *describing* the ligaments, the articular and inter-articular cartilages, and synovial membrane.

17. Give an account of the motions of the knee-joint, mentioning the several muscles by which they are effected.

18. Describe the parts brought into view on removing the Glutæus Maximus Muscle, and state the actions of the gluteal and other muscles of that region.

19. Describe the steps of the dissection required to display the course of the Posterior Tibial Artery from its origin to its division into the plantar arteries, and of its branches, as far as they can be seen on the back of the leg.

20. Describe the parts (excepting the bones and ligaments) as they are successively exposed in dissecting a portion of the anterior region of the thigh, bounded above by Poupart's ligament, and below by a transverse line corresponding with the lower limit of the insertion of the adductor brevis; the dissection to be carried down to the anterior edge of the gluteus medius, the hip-joint, obturator membrane, and anterior surface of the adductor magnus.

21. Give an account of the Popliteal region, describing its form and boundaries, and the parts contained in it, commencing the dissection at the skin, and carrying it to the bones.

22. Describe the Astragalus and Os Calcis (mentioning the surfaces of the attachment of ligaments and muscles, and the grooves for the passage of the tendons), their articulations and connections with

each other and with other bones, and the movements which take place in the several joints into the formation of which they enter.

23. Describe the parts situated in the plantar region of the Foot (except the bones) in the order in which they present themselves on dissection.

24. State the dissection required to expose the Peroneus Longus in its whole course from its origin to its insertion, mentioning its relations to other parts. In the dissection of the sole of the foot commence at the skin, and mention, in the order in which they are seen, all the parts which intervene between it and the tendon of the muscle, and their relations to each other; but the attachments of fasciæ, muscles and ligaments, and the course of vessels and nerves are not to be given.

25. Describe the origin, course and distribution, of the external and internal Plantar Arteries, stating the steps of the dissection required to expose them, and describing the relative situation of the several parts successively brought into view.

26. Commencing at the integuments of the forepart of the Thigh, and carrying the dissection as far back as the anterior surface of the adductor magnus, describe the parts brought into view in dissecting the crural artery and its branches in its course from Poupart's ligament to the point where it passes into the ham.

27. Describe the Hip-joint, giving an account of

the acetabulum and of the upper extremity of the femur, of the cartilages, synovial membrane and ligaments, and of the movements which take place in the joint, mentioning the muscles by which they are severally effected. Compare the shoulder and hip-joints as regards their construction and movements.

28. Describe the knee-joint, giving an account of the extremities of the bones which enter into its formation, of the cartilages, fibro-cartilages, ligaments, and synovial membrane, and of the movements which take place in the joint; mentioning the muscles by which they are severally effected. Compare the knee and the elbow joints as regards their construction and movements.

29. Describe the parts (excepting the bones) seen on dissecting the dorsal and plantar regions of the foot. The ligaments (which include those of the ankle) to be described only so far as they can be displayed without laying open the articulations.

30. Give an account of the cuboid and external Cuneiform bones, and of their articulations with each other and with adjacent bones, mentioning their relations with other parts. What examples of the classes of joints are presented by those of the lower extremity?

31. Describe the sub-cutaneous blood-vessels, lymphatics and nerves of the lower limb, with the saphenous aperture of the fascia lata.

32. Give an account of the Os Innominatum, mentioning the several muscles attached to it, with their place of attachment. Describe also its mode of connection with adjacent bones of the trunk.

33. Describe the ligaments which connect the Astragalus to the Os Calcis, and those which connect the same bones with others. Describe the kind, and the relative degree of movement in the articulations referred to; and mention the ligaments chiefly put on the stretch in each movement. In what position of the bones will each joint best resist a force applied to it?

34. Describe the parts which would be brought into view by tracing by dissection the Peroneal or External Popliteal Nerve and its branches, from the upper part of the Popliteal region to their termination.

35. Describe the Cuboid and fifth Metatarsal bones with the phalanges of the little toe, their articulations with each other and with neighbouring bones, and the points of attachment of the muscles connected with them.

36. Commencing with the integuments of the Gluteal region, describe, in the order in which they would present themselves, the parts successively brought into view in dissecting a space bounded above by the crest of the Ilium, behind by the Sacral and Coccygeal attachments of the Glutæus Maximus, below by the lower border of that muscle,

and before by the anterior border of Tensor Vaginæ Femoris; the dissection to be carried down to the surface of the bones and ligaments, but without opening the hip-joint.

37. Describe the parts exposed to view in dissecting the External Circumflex Artery of the Thigh, from its origin to the termination of its branches.

38. Describe the Astragalus, and the surfaces of the bones with which it is articulated. What movements take place in the ankle-joint, and in the other joints into the formation of which the Astragalus enters? And to what classes of joints do they severally belong? Describe the ligaments of these joints, and mention the structures which are in contact with them.

39. Commencing the dissection at the integuments, at the lower margin of the belly of the Gastrocnemius, and carrying it on to the heel, describe the parts successively brought into view, including the ligaments, in continuing the dissection to the posterior surfaces of the bones and interosseous ligament.

40. Give the dissection required to display the Anterior Crural Nerve, and its branches, from the point where it passes under Poupart's ligament to its termination, mentioning, in the order of their appearance, the different parts exposed in the process, and describing their relative situation; the attachments of the muscles not to be given.

41. Describe the parts successively brought into view in fully exposing by dissection the surface of the Supinator brevis muscle.

MISCELLANEOUS.

1. Enumerate the joints in which either of the two forms of Interarticular Cartilages are found, and describe the use of each form of these cartilages.

2. Describe the peculiar characters of Serous and of Mucous Membranes.

3. Describe the mechanism of deglutition, in its various stages, from the mouth to the stomach.

4. Mention the organs to which the pneumogastric nerves are distributed; and describe their special function in each organ.

5. Mention examples of Muscles of the Body acting as levers of each kind, and state the reason for the large preponderance of those acting as levers of the third kind.

6. Enumerate the different kinds of moveable joints, giving examples, and mentioning the movements of which each kind admits; describe the structure of the following component parts of moveable joints, viz., Ligament, Synovial Membrane, Articular and Non-articular Cartilage.

7. Describe the arrangement of the Muscular Ccat

of the various parts of the Alimentary Canal, from the commencement of the œsophagus to the anus. Mention the purposes of its varying abundance, and different arrangement at different parts of the canal.

8. Describe the structure of the Mucous Membrane of the Stomach, and of its Glands.

9. Describe the structure and functions of the skin.

10. Describe the origin of the Lacteals, their course and structure, and the structure and use of the Mesenteric Glands.

11. Give the structure and properties of the Mucous Membrane in general, and state briefly the chief difference which it presents in different situations.

12. Give an account of the several structures which enter into the formation of the skin, including a description of the glands, hairs, and nails.

13. Give an account of the form and structure of serous membranes in general, the nature of their secretions, and the purposes which they serve.

14. Mention the principal situations in which nervous ganglia are found. Give an account of the outward appearance and intimate structure of these bodies.

15. Give an account of the structures, physical properties, and chemical constitution of the Elastic Tissue.

16. Give an account of the structure of the Adi-

pose Tissue, its distribution in the body, and the purposes which it serves in the animal economy.

17. State what has been ascertained as to the structure of Lymphatic Glands.

18. What organs of the human body may be comprehended under the name of 'ductless glands'? Describe the situation, form, and internal structure of the Supra-renal body; also the source and mode of distribution of its blood-vessels and nerves.

19. Give an account of the form, structure, connections, and mode of growth of the nails.

20. Describe in their relative position the parts brought into view on removing the undermentioned muscles, viz.:—The Pectoralis Major and Deltoid; the Glutæus Maximus, the Trapezius, the Gastrocnemius, Plantaris, and Soleus.

21. Give an account of the structure and chemical composition of Articular Cartilage.

22. Give an account of the structure of a nerve (i.e., of a trunk or large branch); describing the size, mode of disposition, and microscopic characters of the nerve fibres, with the nature and arrangement of the enveloping tissues and blood-vessels. State what differences have been observed in the structure of different nerves. Discuss the question as to the nervous nature of the grey or gelatinous fibres.

23. Give an account of the system of Lymphatic vessels, describing their structure, and that of a

Lymphatic gland, their mode of origin, general course, and termination.

24. Give an account of the Cellular or Areolar Tissue, describing its structure, its physical and vital properties and chemical composition, the varieties which it presents in different parts, and its mode of distribution in the body.

PHYSIOLOGY.

1. State the composition of the Air we breathe, and the changes which the Air and the Blood undergo in their passage through the Lungs.

2. Describe the structure of the larger and smaller Arteries and of the Capillary Vessels, and their respective offices in circulation and nutrition.

3. Enumerate the structures which compose the Skin, and describe its functions.

4. Enumerate the different kinds of Cartilage that exist in the Human Body; describe the peculiarities of structure that distinguish each variety, and state the purposes which each answers.

5. Mention the different Secretions which imbue the Food in the mouth and in the stomach during Mastication and Digestion. State the chemical composition of each secretion, and its physiological purpose.

6. Describe the structure of the Uterus; and mention the changes which take place in the organ during gestation.

7. Describe the structure of the Placenta; state the changes which the Fœtal blood undergoes by circulating in this organ, and the mode by which those changes are effected.

8. Describe the formation, composition, properties, and uses of the Epidermis.

9. Mention the average quantity of urine passed by an adult in twenty-four hours; state its specific gravity, and its chemical composition in health.

10. Describe the physical and chemical qualities of the Blood on the right and left side of the Heart.

11. How is the Heat of the Fœtus maintained *in utero?* and how is it produced and maintained after birth?

12. Describe the changes which take place in the circulation of the Blood after the birth of the child.

13. How is death produced by starvation? Describe the appearances observed after death from this cause.

14. Describe succinctly the changes which take place in the blood and air subjected to the process of *Respiration.* State the results of the interruption of this process, and the condition of the cavities of the Heart, and their contents, should death have been produced by a suspension of breathing.

15. What are the functions of the *fifth* and the *seventh pairs of nerves* respectively?

16. What part of the process of Digestion takes place in the *Duodenum,* and what are the peculiarities of form and structure which adapt it to its office? Mention also the secretions which are poured into it.

17. What do you understand by Reflex Action? Describe its different forms, and give examples of each.

18. By what means is the Eye adjusted to distinct vision at different distances? How may the 'blind spot' and the *macula lutea* be demonstrated in the living subject?

19. State shortly the differences between the cell theories of Schwann, Goodsir, and Huxley.

20. What phenomena results from dividing *only* the posterior columns of the spinal cord in a living animal?

21. What are the arguments for and against the view that sugar is formed in the Liver?

22. On what arrangement of nerves is the sense of touch dependent? Where is this sense most, and where least acute?

23. What are the results of section of the trunk of the Sympathetic Nerve in the neck?

24. What are the facts and arguments which support the idea that there is a 'muscular sense,' or a 'sense of resistance?'

25. Give an account of the structure, composition, development, and mode of growth of Bone.

26. Describe the mucous membrane of the Duodenum, and the effects upon the different constituents of the food of those fluids which are mingled with it in this portion of the alimentary canal.

27. Describe the experiments by which the functions of the anterior and posterior roots of the spinal nerves are demonstrated.

28. Give an account of the essential and accessory

parts of the organ of Smell. Analyse the action of smelling at an odorous body.

29. Give a general description of the various modes by which Reproduction is effected in the Animal Kingdom.

30. State what you know respecting any experiments which illustrate the influence of the Nervous System upon the process of Secretion.

31. Suppose one of the higher animals so confined that it is compelled to breathe over and over again a given quantity of air; describe in detail the effects (1) upon the animal (2) upon the air.

32. What is the Chemical Composition of the Blood; its reaction, specific gravity, and ordinary quantity? Explain the purpose served by each of its constituents.

33. Mention the different forces by which the circulation of the blood is carried on, the uses of the valves of the heart, and the number of its pulsations at the different periods of life.

34. State the purpose of respiration, the chemical and physical changes the blood undergoes in the lungs, and the effect of air rendered impure by respiration and by effluvia from decomposing vegetable and animal matters.

35. Classify the cranial nerves according to their functions.

36. Explain briefly the modern pathology of inflammation.

37. Explain the functions of the three branches constituting the eight pairs of Cranial Nerves.

38. Give the composition of Bile. The function of the Liver as an assimilating and excreting organ. The test for distinguishing *suppression* or non-elimination from *obstruction* of secreted but retained bile.

39. State what is known of the deviations from normal Blood constituting the tubercular crasis and its chief causes.

40. Describe the form, size, and structure of nerve-cells, and their varieties. What is most generally understood to be their relation to the nerve-fibres? Describe also the microscopic characters of the different kinds of nerve-fibres, and the special structures connected with their extremities in certain parts of the skin and mucous membranes.

41. Describe the acts of deglutition and vomiting, and explain the mode in which the muscles co-operate in these processes. What nerves are concerned in deglutition, and how do they severally contribute to the effect?

42. In what manner does the *velocity* of the blood's motion differ in different parts of the sanguiferous system, and to what causes is the difference to be ascribed? What is the actual velocity in the carotid artery and in the capillaries respectively? What time is required for a complete circuit, and by what means are these points ascertained?

43. Describe the phenomena of the heart's motion;

and state what seems to be the most probable explanation of the impulse and sounds to which it gives rise.

44. On what evidence, derived from observation or experiment, can it be shown that the motions of the heart are excited, regulated, or otherwise influenced through the nervous system? And in what way is such influence exerted?

45. What is the average quantity of urine discharged by a healthy man in twenty-four hours? Whence is it supposed to be derived? And how is the quantity modified by food, exercise, and other circumstances?

46. Give an account of the structure of the ovary and ovum in a mammiferous animal; and describe the series of changes which ensue in the mammalian ovum in consequence of impregnation, from the time it leaves the ovary up to the period when the first trace of the embryo appears. State also the changes which take place in the Graafian follicle from which the ovum has been discharged.

47. Give an account of the deciduous membrane, the chorion, and the amnion (with its fluid), including their structure and uses, their mode of formation, and the changes they undergo in the progress of pregnancy.

48. What amount of Refraction do the transparent media of the eye respectively cause in bringing the visual rays to a focus, and how are the effects of

spherical aberration obviated? Explain how the eye becomes enabled to see objects at different distances, and give examples of special arrangements for this purpose met with in the eyes of Birds and Fishes.

49. Define the physiological differences between the Motor, Sensitive and Excito-motor Nerves. Give a few examples of reflex motor action.

50. Give an account of the Blastoderm, or germinal membrane, in the ovum, and state the opinions of modern physiologists relative to the original formation of the animal tissues.

51. What is the intimate composition of the Ganglionic system of Nerves? State the distinctive properties of organic nervous matter. In what structures is its presence to be detected, and what are its functions in the animal economy?

52. Describe the minute structure of the fibre of voluntary muscle, and its condition, as shown by the microscope, when in the opposite states of contraction and relaxation.

53. What influence do the Nerves exert over the Digestive Functions of the Stomach, and in what respects does artificial digestion differ in its results from that effected in the living animal?

54. By what means have fluids and saline solutions been supposed to pass into the circulating fluids in order to explain the rapid appearance of certain odorous substances and chemical re-agents in the

urine and other secretions? What is the most probable explanation of the phenomenon?

55. Describe the Duodenum, more particularly with reference to the minute structure and functions of its different coats; the nature of the secretions which are poured into the intestinal canal at this part, and their influence on the process of digestion.

56. State the properties of Chyle, and point out the difference between the composition of that fluid and of the blood.

57. Describe the Urinary secretion, its origin, chemical composition, and importance in the animal economy.

58. Give a brief account of the Sympathetic system of nerves, and define the functions over which it presides. What is its general arrangement in the different classes of vertebrate animals, and how is it represented among the Invertebrata?

59. What is the source of Fat, and what are its uses in the human economy?

60. Describe the Circulation of the Blood through the capillaries at the periphery of the body, and the agencies by which it is sustained.

61. Give an account of the action of the Heart, and its effect in aiding the circulation of the blood. Likewise compare the human heart with that of a Bird, a Reptile, and a Fish.

62. Describe the minute structure of bone, its mode of formation, and vital properties.

63. Describe Muscular Fibre, its physical structure both in the voluntary and involuntary muscles, and the influence of the nerves on muscular contraction.

64. What are the principal theories relative to the source of Animal Heat?

65. Describe the skin, and the importance of its secretions in the human economy.

66. Give an account of the arrangement, intimate structure and chemical composition of the several constituent tissues of the Teeth.

67. What are the principal components of the Blood in Vertebrate Animals, their respective characters, properties, and uses in the economy, their chief diversities in the several classes of this sub-kingdom, and their properties in the healthy Human system?

68. State the essential nature of the *Respiratory* process; the purpose which it answers in the economy; the causes which ordinarily render its continuance essential to life; the circumstances under which it may be temporarily suspended without injury to the system; and the changes which it normally produces in the Blood and in the Air respectively.

69. Describe the structure and actions of a *Gland*, according to modern views; trace the gradual development of the *Liver* through the principal series of Invertebrated Animals; describe the chief varieties presented by the structure of the *Kidney* in the different classes of vertebrata; and give an account

of the chief components of the urinary secretion, and of their respective sources.

70. Upon what Chemical process is the maintenance of *Animal Heat* chiefly dependent? how is this maintained in the bodies of Man and of the Carnivorous and Herbivorous Animals respectively? and what is its relations to the presence of Fat in the Animal body?

71. Describe the apparatus by which the *Embryo* obtains its nourishment from the contents of the *Ovum* in Oviparous Vertebrata; the provisions for the aëration of its blood; and the manner in which these are combined in the Placenta of Mammalia.

72. Give an account of the minute structure of the *Striated Muscular Fibre*, and of its vital endowments; and point out how far these correspond with the properties of the contractile tissues of Plants.

73. Describe the *Respiratory Apparatus* of the Human skin; the nature, amount, and uses of its secretion; and the circumstances under which this is liable to variation.

74. Describe the functions of the three Nerves commonly grouped together under the name of the Eighth Pair, and of their several branches; as determined by their anatomical distribution, and by experimental enquiry.

75. What are the *physical* and vital endowments of the middle coats of Arteries; and how do these

modify the passage of the blood through the arterial system?

76. Describe the component structures of *Human Teeth.*

77. What are the sources of the *Demand for Aliment* in the human body; and what are the principal conditions by which that demand is regulated? Enumerate the principal classes of *Alimentary Materials;* state the purposes to which they are severally subservient in the economy; mention the chief proximate components of bread, meat, potatoes, milk, rice and arrowroot, and state the quantity of food ordinarily requisite to maintain the human system in vigorous action.

78. Explain the dependence of the *Respiratory Movements* upon the Nervous System; describe the position of the respiratory ganglia in Articulata, Mollusca, and Vertebrata; give the rationale of the ordinary and extraordinary movements of respiration in Man; and mention what nerves are concerned in each.

79. Describe the principal stages of the *Development of the Nervous Centres* in the Human fœtus; and state how far these correspond with the permanent forms of those organs in the lower animals.

80. Give an account of the minute and chemical structure of Bone; describe the mode of its first formation and subsequent increase; and state the chief diversities which it presents in the different classes of Animals.

81. State what you consider to be the functions of the Cerebellum; and give the grounds for your belief.

82. What are the probable functions of the Absorbent System, as inferred from its structure, its distribution, and its comparative anatomy, as well as from experimental investigation?

83. What portions of the fully formed Human organism are composed of *simple cells*? and to what functions are they respectively subservient?

84. What do you consider to be the degree of dependence of Nutrition and Secretion upon the Nervous System? and what are the grounds of your belief?

85. What appear to be the relative functions of the Absorbent and Sanguiferous vessels in the *Absorption* of nutritive and other substances from the alimentary canal? what difference exists in this respect between Vertebrated and Invertebrated Animals? and how far may the act of Absorption be explained on physical principles?

86. Give an account of the mode in which vital Action is influenced by Heat, illustrating it by examples drawn from cold-blooded animals, and from warm-blooded animals in the states of hybernation and starvation.

87. What are the principle functions of the Spinal Cord (including the Medulla Oblongata) of Vertebrated *animals;* and what parts of the Nervous

System of Articulata and Mollusca are its equivalents?

88. Describe the principal phases in the development of the *Circulating System* of the Mammalian fœtus, from the first appearance of blood-vessels in the ovum to the time of birth, and state how far these may be regarded as corresponding with the permanent conditions of the vascular system in the lower classes of Animals.

89. In what way is the *Circulation* of the blood affected by suspension of the Respiratory process in a warm-blooded animal, and what is the immediate cause of death if that suspension be continued.

90. In what manner are *Vocal Sounds* produced in the Larynx? Upon what acoustic principles may their production be explained? and in what way are they modified by the actions of the several muscles which form part of the laryngeal apparatus?

91. What is the normal composition of the *Urine* in Man? what are the probable sources of each of its principal components, and how far are their respective proportions liable to be influenced by mental or bodily exertion? what reason is there to suppose that these components pre-exist in the blood, and what are the consequences of an entire suspension of their elimination?

92. In what does the process of *Digestion* essentially consist? what share in it is performed by the Salivary, *Gastric, Pancreatic,* and Hepatic Secretions respect-

ively? and what are the results of its operation upon different kinds of alimentary material?

93. What are the nerves concerned in the act of *Deglutition;* and what are the inferences you might draw from the circumstances under which that act may be performed (as shown in states of disease, and by experimental enquiries) with regard to the nature of Reflex Action in general.

94. What is the nature of the *Muscular Sense,* and what share does it take in the performance of Voluntary Movements?

95. Describe the successive modes in which the *Human Fœtus* derives nourishment from its parent; and mention at what stages in the evolution of this plan it is checked in Fishes, Reptiles, Birds, and the inferior Mammalia.

96. Show the dependence of all *Vital Action* upon *Heat*, by examples drawn from the different classes of Animals; and give an account of the chief provisions which are met with for its constant or occasional development in the living body.

97. Give a general account of the process of *Respiration* as performed in the Human subject, specifying the minute structure of the air-cells of the Lungs, and of their capillary network; the mechanism by which the air contained in them is continually renewed; the parts of the nervous system by whose action the movements are sustained; the average quantity of air that passes through the lungs

per minute; and the nature and amount of the changes of composition effected in it by the respiratory process.

98. Describe the structure of the *Electric Organs* in the Fishes which possess them; and enumerate the principal phenomena of their action, pointing out the dependence of these upon nervous agency.

99. Give an account of the Microscopical characters of the different forms of *Nervous Tissue*, and of its chemical composition; state what may be probably regarded as their respective functions, and how far these are dependent upon oxygenated blood; and point out the relations between Nerve-force and Electricity.

100. Give a general account of the history of the Development of the *Human Teeth*, both of the temporary and permanent series; point out the analogies between its successive stages and the modes of dentition of the lower Vertebrata, and describe the organic structure and chemical composition of the Dentine, Enamel, and Cementum.

101. Describe the principal forms under which the *Liver* and *Pancreas* present themselves in the animal series; and state what, according to recent investigations, may be considered as their respective offices in the operations of Digestion and Assimilation.

102. Describe the movements of the *Alimentary Canal* in Man, from its commencement to its termination; and point out how far these are dependent

on the Nervous System, or are influenced by it, and how far the Mind participates in them.

103. Describe the structure, chemical composition, properties, and mode of development and repair of the *White* and *Yellow Fibrous Tissues*; and give an account of their general distribution in the Human Body, as well as of the functions to which they are respectively subservient.

104. Enumerate the actions of the different Muscles of the *Human Larynx*, and show how these are employed in the production of Vocal Sounds and in the regulation of the respiratory movements; and state what are the respective functions of the nerves by which they are supplied as determined by the results of their action.

105. Describe the minute structure and chemical composition of Cartilage; its principal varieties; state what is known of its mode of development, growth, and reparation; and point out the bearing of these facts on the general doctrines of Nutrition, as regards (1) the independent formative power of individual parts, (2) the relation of the tissues to blood-vessels, and (3) the necessity or otherwise of nervous influence for the formative operations.

106. What are the sources of demand for the Excretory operations generally? what are the effects of their suspension? and what special part does each take in freeing the system from injurious matters, either formed within itself, or introduced by it?

107. In what modes is the *Absorption* of Nutrient Materials effected in Man and other Vertebrata; and what representations of these processes are found in Invertebrated animals? Describe the composition and properties of Chyle, with relation to those of Lymph and Blood; and trace its course from the Intestinal Villi to the Heart. And explain how *other* soluble substances contained in the Alimentary Canal find their way into the circulation.

108. What are the sources of the Excretion of Carbonic Acid from the Lungs? how far may this process be accounted for on physical principles? and what are the essential provisions for effecting it? What may be considered as its average daily amount in man; and what are the principal circumstances which tend to modify it?

109. What is the normal *Temperature* of the Human Body? Describe the means by which it is sustained, and prevented from being unduly elevated; and show, from the physiological history of Cold-blooded Animals, and of Hybernating Mammalia, the relation between Heat and Vital Activity.

110. Describe the structure of the walls of *arteries*, show how the current of Blood is modified in its passage through them, and explain the nature of the *Pulse*.

111. Describe the constituent parts of the *Mammalian Ovum*; enumerate the principal changes which *it undergoes in* the course of its evolution, matura-

tion, and discharge from the ovarium; explain the mode in which the 'mulberry mass' is formed after fecundation; and state what changes take place within the Graafian follicle, after the expulsion of the ovum.

112. To what extent are the Several Organic Functions — Digestion, Sanguification, Circulation, Respiration, Nutrition, Secretion, and Reproduction —*dependent upon* the Nervous System? How are they *influenced by* it? And with what parts of it are these relations the most positive and intimate?

113. What are the phenomena of Death by *Starvation*, and what is its immediate cause, as shown by the experiments of Chossât?

114. Describe the general distribution of the *Pneumogastric* Nerve, and the functional endowments of its principal branches, stating the results of the experiments made to determine these.

115. Describe the two principal kinds of *Muscular Fibre*; state in what parts of the Human body they are respectively found; and give an account of their vital endowments, and of the conditions under which these manifest themselves.

116. What are the principal components of the Blood, and from what sources are these derived? in what proportions do they ordinarily present themselves in Man? and what may be presumed to be their respective uses in his economy?

117. Describe the normal action of the Heart, the sounds which it produces, and their causes; state

how far you consider this action to be dependent upon Nervous Agency; and mention the principal conditions which have been found to affect its rate.

118. In what modes do the action of the *Spinal* Cord (including the Medulla Oblongata) take part in the performance of the Organic Functions?

119. Give an account of the structure of the Human *Placenta*, its functions, and the mode of its formation; and state in what way its place is supplied in the Implacental Mammalia. Describe the course of the Circulation in the *Human Fœtus*, and state how far this has its parallel in the adult condition of any other animal.

120. Give an account of the *Coagulation of the Blood*, and of the conditions on which it depends; mention the principal circumstances which affect the completeness of the process and the period of its occurrence, and state the results of *excessive* and *deficient* coagulability, as regards the system at large.

121. Describe *Ciliary Movement*; mention the parts of the body of man on which it occurs, and the purposes which it serves in his economy, and give a general account of its distribution and offices among the lower animals.

122. In what Tissues of the body do the *Disintegrating* processes seem to take place most rapidly? what are the conditions which promote or retard their *activity? how* are their results eliminated through the

several excretory organs; and what are the consequences of any check to such elimination?

123. Describe the Secreting apparatus of the *Skin*, and the respective functions of its different glandulæ, and state the purpose of the *Cutaneous Exhalation* in the general economy, with the principal conditions of its variation.

124. What are the *Nerves* by which the *Tongue* is supplied; and what may probably be inferred from their distribution, from experiment, and from pathological observation, as to their respective functions? Describe the structure, and the probable uses, of the different kinds of *Lingual Papillæ*, in Man and other animals.

125. Describe the several *Motions of the Eyeball*, and the actions of the several Muscles by which they are performed; state how far they are, and how far they are not, under the immediate control of the *Will*, and describe the influence of *guiding sensations* in their production and direction; and point out in what respects they accord, and in what they differ, from ordinary Volitional movements.

126. Describe the first formation of the *Sanguiferous System* in the *Human Fœtus*, and the principal changes which it undergoes, up to the establishment of the pulmonary respiration.

127. Enumerate the Principal Constituents of the *Urine* of Man—the amounts in which they are ordinarily found, and the chief conditions of variation in

their respective proportions; and state what appears to be the source of each, in the components of the food, or in the metamorphic actions of the economy.

128. Describe the comparative development of the *Lacteal* system in the *Animal* series; explain what part it takes in *Absorption*, as compared with the sanguiferous system; and compare the nature and composition of Chyle with those of Lymph and Blood.

129. To what actions within the body does the *Oxygen* introduced by the Respiratory process ordinarily become subservient; and what are the effects of a prolonged deficiency of oxygenation upon the composition of the Urine?

130. Describe the form, movements, and development of the *Spermatozoa*; and state the grounds for attributing to them the essential part of the act of Fecundation.

131. Describe the origin and general distribution of the *Fifth Pair* of cranial *Nerves*, with the attributes of its principal subdivisions; and state the effects of the intracranial section of its trunk.

132. Describe the minute structure of the Spleen; the principal diversities it presents among different animals; the peculiarities of splenic blood under various circumstances; and the inferences as to the function of the organ which you would base on these facts.

133. Give an account of the Red Corpuscles of *the Blood*, describing their figure, size, structure,

and chemical nature, with the chief differences they present in different vertebrated animals; state also what is the average proportion of red corpuscles in human blood, and what variations are observed according to age, sex, and other circumstances.

134. Describe the secreting structure of the Liver; give an account of the composition and uses of the bile; and state what is known of the changes produced in the composition of the Blood during its passage through the portal circulation.

135. Describe the origin and development of the Allantois; state what is its office in the embryonic development of the Bird; and explain the part which it takes in the formation of the Placenta in the Mammal.

136. Describe the structure of the Medulla Oblongata, its connection with other parts of the Encephalon and with the Spinal Cord, and the mode of origin of the several nerves attached to it. What is the present state of our knowledge of the functions of its several constituent parts?

137. What is the essential condition of fecundation; what are the steps in the process of development of the embryo throughout the Animal Kingdom?

138. Describe the ultimate structure of the Human Lung; explain the mechanism of Inspiration and Expiration; and give an account of the physical

process by which the exchange of gaseous constituents between the blood and the atmosphere is effected.

139. What is the structure of the different kinds of Contractile Tissue? State the arguments for and against the existence of a *vis insitu*, or inherent contractile power in muscle.

140. Describe the structure of the Human Ovary and Ovum, and give an account of the process of menstruation.

141. Give an account of the process of Ossification, and describe the structure of fully-formed bone.

142. What is the structure of human Hair, and how is it developed?

143. Describe the structure and offices of the Wolffian bodies, and explain their relations to the genital organs.

144. Describe the leading features in the development of the Vertebrate embryo; explaining the mode of origin of the Umbilical vesicle, the Amnion, the Allantois, and the placenta. What are the 'primitive groove' and the 'chorda dorsalis,' and by what embryological states are spina bifida and hare lip explicable?

145. Give an account of the structure and development of the spermatozoa in Man. State what is the essential nature of the process of Fecundation, giving the evidence on which your conclusions are based. What animals have motionless *spermatozoa*?

146. What is the structure of the human kidney, and what are the proportions of the various constituents of the normal urine?

147. Describe the structure of the organs of smell in Man, noting the peculiarities of the olfactory nerve, and explaining the mechanism by which odorous particles are brought into contact with the Schneiderian membrane.

148. Describe the Development of the Human Brain.

149. What animals have, occasionally or permanently, a temperature higher than that of the medium in which they live? What are the sources of Heat in the animal economy, and on what conditions does the temperature of any given part of the Human body depend?

150. Describe the structure of all the glands which are connected with the alimentary canal of Man, except the Salivary, Hepatic and Pancreatic; and give an account of the known or supposed functions of each.

151. Classify the proximate constituents of a piece of bread under the two heads of 'nutritious' and 'non-nutritious.' Suppose the piece of bread to be eaten, and trace out the changes it undergoes in its passage from one end of the alimentary canal to the other.

152. Describe the origin, the structure, and the functions of the Human Placenta; and state in what

groups of animals the young are connected with the parent by a placenta, or at least by an organ having a similar function.

153. In which of the lower animals are there no capillaries, the arteries and veins being united by 'lacunæ' or by the general cavity of the body?

154. By what experiments can it be shown that the state (as regards contraction or dilatation) of the arteries is greatly dependent on nervous influence? How does the state of the arteries affect the blood contained in them, and in the capillaries which they supply?

155. Give the number, kinds, order of succession, and mode of development of the teeth in Man. To what teeth in man do the tusks of the Elephant and those of the Boar correspond respectively?

156. What are the *corpuscula tactus*? What functions have been ascribed to them, and how may the delicacy of the sense of touch in different parts of the body be estimated?

157. Describe the minute structure and the functions (so far as they have been ascertained by trustworthy experiments) of the Spinal Cord and Medulla Oblongata.

158. Describe the development of the Mammalian Skull and Face; and point out what adult vertebrate crania present a certain resemblance to various stages of the Mammalian Skull.

159. Give an account of the mode of development

of the male and female genitalia, and the descent of the Testis.

160. Describe and contrast the structure and modes of development of ordinary Bone, of Dentine, of Enamel, and of Crustacian and Molluscan shell.

161. What is the minute structure of the trachea, bronchi, and pulmonary cells?

162. What is the structure of the Human Tongue, and on what evidence does the received views as to the functions of its nerves rest?

163. What is Connective Tissue? Describe the structure, behaviour with reagents, and the chemical constitution of what you consider to be a typical example of that tissue. Then point out the principal modifications which it undergoes, the localities in which it occurs, and the purposes which it subserves.

164. Give an account of the histological structure of the Heart, its movements, and the mechanical import of its different parts in the adult, and describe the changes which it undergoes in the fœtus.

165. Describe the process of digestion and of the absorption of its products, in the case of—1. Wheaten bread; 2. Meat; 3. Milk.

166. Describe the physical and chemical characters of the blood in man, and the changes it undergoes when removed from the course of circulation, both within and without the body; and state the conditions by which its coagulation is affected in either case respectively.

167. Describe the structure of the 'ovum' in the Bird and Mammal; and the essential conditions of impregnation.

168. Describe the act of rumination, and the principal modifications in the structure of the digestive organs presented in the class Ruminantia.

169. Describe the structure and functions of the spinal cord (not including the medulla oblongata); and state what has been determined experimentally with regard to the transmission of sensory and motor impressions through it.

170. State the differences which exist in the functions of the Submaxillary and Parotid Glands in Man and other Mammalia, and the result of recent researches respecting the innervation of those two organs.

171. Point out the essential conditions upon which the maintenance of the irritability in nerves depends; and mention experiments proving certain conditions to be indispensable. Also, describe the changes which take place in the peripheral and central portions of a divided nerve, a short time after its division.

172. Describe and account for the various caloptric phenomena exhibited in the human eye; and the differences observed in some of these phenomena when the eye is adjusted to distant and to near vision.

173. Describe the structure and presumed functions of the ductless glands in the human subject.

BOTANY.

1. Define the terms Inferior, Loculicidus, Corolla, Folliculus, Placenta, Spatha.

2. Give such diagnosis of the following Orders as may be sufficient to include our British genera:—Linæ, Compositæ, Labiatæ, Aroideæ.

3. Give such diagnoses of the following Genera as will include our British species, alluding also to such of the more important or prominent peculiarities in the flower, fruit and seed as you may happen to remember:—Helleborus, Apium, Convolvulus, Salix, Carex.

4. Define the terms Radix, Ligula, Digitatus, Perianthium.

5. What are the chief modifications of the stem?

6. Describe the difference between a true and false Arillus, stating examples.

7. State the more prominent theories that have been proposed for explaining the formation and development of cells.

8. What are the chief modifications of structure in the flowers of Leguminous plants?

9. Describe the function of 'exhalation.'

10. Define the terms Endocarpium, Pericarpium, Papilionaceus, Diadelphus, Parenchyma, Vernatio.

11. Give such diagnoses of the following Orders

as may be sufficient to include our British genera:—Umbelliferæ, Scrophularinæ, Cucurbitaceæ, Colchicaceæ, Gramineæ.

12. Give such diagnoses of the following Genera as will include our British species:—Hyoscyamus, Vicia, Primula, Arum, Tris.

13. Define the terms Carpella, Commissura, Raphe, Distichus, Thyrsus.

14. What are the chief adventitious inorganic constituents found in plants? naming a few examples in which one or other of them are peculiarly abundant.

15. What are the conditions essential to the germination of seeds?

16. State some of the most remarkable phenomena attributed to the peculiar irritability manifested in some plants.

17. Define the terms Didynamus, Cyme, Valva, Carpella, Arillus, Capsula.

18. Define the terms named in Questions 1 to 6:
    1. *Glans.* What are its modifications in Quercus, Castanea, and Corylus?
    2. *Testa.* Mention good examples in which it is bony, crustaceous, and membranous, respectively.
    3. *Lodicula.* How many are found in Triticum, Anthoxanthum, and Stipa?
    4. *Umbella.* The modifications in Umbelliferæ.

5. *Pappus.* Why sessile in some, why stipitate in other species of Compositæ?
6. *Dissepimentum.* Distinguish between a true and a false; and give three good examples of the latter, selected from different orders.

19. State the different origin of Tendrils, and name examples of each kind.

20. What is the relative position of Hile and Mycropyle in Vicia, Quercus, Taxus, Ranunculus, and Lychnis? Give the corresponding Inversions of their Embryos.

21. Give examples of plants in which a milky Latex is wholesome, and of plants in which it is deleterious.

22. Trace the changes which take place in an ovule immediately after it has been fertilised, up to the perfecting of the Embryo.

23. Describe Cambium; state the place it occupies and the office it performs.

24. State what is known of the movement of fluids in the interior of plants, both partial and general.

25. What is the cause of the ascent of sap?

26. Describe the substance called Cellulose, and state the place which it occupies in the Vegetable structure.

27. Describe the phenomena of germination in Dicotyledons and Monocotyledons.

SURGERY.

DISEASES AND INJURIES OF THE BONES.

1. Give the different varieties of both simple and compound fractures of the Patella; describe the surgical anatomy of the parts connected with such injuries; and then give the mode of treatment, both locally and generally, of the various fractures of the Patella; pointing out such compound fractures of this bone; and such injuries of the Knee-joint, connected with them, as may require either the immediate or the more remote amputation of the limb.

2. What are the different causes of an Inflammation of the Tibia, which may end in abscess, caries, or necrosis of this bone? Trace the symptoms, treatment and effects of each of these varieties of Tibial disease through their several stages, from their commencement in inflammation up to favourable or unfavourable issue of the abscess, caries or necrosis, as the case may be.

3. Describe the symptoms and appearances of fractures of the Os Innominatum; when the injury is confined to the Crista; when the fracture passes across the bone, behind the Acetabulum; when it extends through some part of that cavity, or through

some portion of the Pubis or Ischium in front of it, whether on one or both sides of the Pelvis. Mention the treatment, both locally and generally, required for these several varieties of fracture, and the probable termination of the cases.

4. Give the local and general treatment of a compound fracture of the Thigh-bone, about its middle third, whether arising from falls, blows, or gun-shot; and when it is decided to amputate the Limb, either immediately after the receipt of the fracture, or at any subsequent period, you will give your reasons for such decision.

5. Describe the diagnosis and the treatment of Fracture of the Acromion and of the Scapula.

6. Mention the different fractures which occur at the Elbow, and at the superior radio-ulnar joints; state the diagnostic symptoms, and the best treatment of each injury.

7. Mention the most frequent accidental cause, the local symptoms, and the proper treatment of a simple fracture through the *carpal* end of the Radius.

8. Mention the various fractures of the Patella, and the mode in which they are produced. Mention and explain the symptoms which follow this accident; describe the surgical treatment, and the method by which each variety of this injury is repaired.

9. Describe the symptoms (local and general) of

Acute Periostitis of the Tibia resulting in Necrosis. Explain the cause of the death of the bone, and the method of reparation adopted by Nature in such a case.

10. Describe the various tumours affecting bone, then structural characters, and right modes of dealing with them.

11. Give a description of the symptoms and effects of Fracture of the Ribs, according as one or more bones are broken, as the fracture is simple or compound, and as it does or does not implicate the pleura lining them, or the serous covering or substance of the lungs; and mention the local and general treatment required, according to the varieties in the symptoms and nature of the several cases; and where the injury is fatal, either directly or remotely, describe the appearances you would expect to find on an examination of the chest.

12. Describe the symptoms of fracture of the Neck of the Thigh-bone, both within and without the Capsule, the treatment and the usual result.

13. Describe the local symptoms of Acute Periostitis (say of the Tibia); state the possible results, and mention the treatment.

14. Describe all the symptoms which indicate a Fracture of the Clavicle in the middle of the bone. State the position of the broken ends of the bone, and the cause of the deformity produced. Describe the treatment.

15. When the Femur is broken a little below the lesser trochanter, what is the position of the upper and of the lower fragment? To the action of what muscles is the distortion of each of them owing?

16. Describe the symptoms of Osteo-myelitis. State what are the principal causes of this disease, the consequences that may result from it, and the treatment that has been adopted with the view of averting them.

17. Describe Tumours of Bone, their pathological characters and diagnostic marks, and the treatment required for their removal.

INJURIES TO THE HEAD.

1. Describe the local and general treatment of a lacerated wound of the scalp; give the distinguishing marks of common and erysipelatous inflammation attending such an injury: and when the external wound is succeeded by inflammation of the brain and its membranes, you will detail the symptoms and the treatment of its varieties, through their several stages, up to a favourable or fatal issue, giving such appearances as you will expect to find within the head after death; according to the symptoms which you have had to combat in the progress of the case.

2. What are the natural processes by which

Incised, Lacerated and severely Contused wounds of the scalp are repaired? State the Surgical treatment of each kind of wound.

3. What are the symptoms and appearances attending a fracture of the skull which require the operation of the Trephine, either immediately after the receipt of the injury, or at any subsequent period? Give the method of performing the operation, with the local and general treatment of the patient up to a favourable or fatal issue.

4. When a person is rendered insensible, immediately after the receipt of a blow on the head, unattended with a tumour or laceration of the scalp, what are the symptoms which would induce you to consider it a case of concussion of the brain, without any of the bones of the skull being fractured? Give the treatment to be pursued in such concussion, under mild, or the most dangerous symptoms, through the various stages up to a favourable or fatal issue; and when the case terminates in death, you will note down the appearances, such as you expect to find, within the head, according to the symptoms which you have been treating. You may add the history of any cases of concussion of the Brain, which you may have seen worthy of observation.

5. Mention the kind of accident which might produce Fracture of the Base of the Skull; and describe the symptoms which indicate such an injury. State

the treatment to be adopted, and the probable or possible result.

6. Describe the symptoms indicative of inflammation of the Membranes or of the substance of the Brain, which may follow fracture of the skull, or other injuries to the head. Mention the probable result of such inflammation.

7. Under what circumstances of Injury of the Head is Suppuration within the Skull likely to take place? State where such deposit of Pus may occur, what symptoms indicate its formation and presence, and what treatment you would adopt to afford relief.

DISEASES AND INJURIES TO THE SPINE.

1. State the symptoms which are produced by fractures of the Vetebræ, affecting the Cord, in different regions of the Spine. What is the probable duration of life after such injuries, according to the situation of the injury?

2. What would be the probable symptoms resulting from Fracture of the Sixth Cervical Vertebræ, accompanied by lesion of the corresponding portion of the Spinal Cord? What would be the proper treatment in such a case?

3. State the symptoms and diagnostic signs of 'Psoas Abscess;' describe the pathological conditions associated with it, and what you consider to be the best *treatment* of such a case.

4. What is Spina Bifida? What are the effects usually produced by it? Give the treatment.

5. Describe the causes, symptoms, consequences, and treatment of Acute Caries of the Lower Dorsal Region of the Spine.

DISEASES OF THE BREAST.

1. Describe the pathological characters of Adenocele, its symptoms, diagnosis from other diseases of the breast, and the appropriate treatment.

2. Enumerate the various diseases of the Female Breast. Give, first, the symptoms, appearances, and treatment of such as yield to local and constitutional remedies, stating those remedies; secondly, such as are considered to be malignant. Describe the method of performing the operation of removing a diseased breast, with the subsequent management of the patient under favourable or adverse circumstances, and, lastly, you will state such local and constitutional appearances as in your opinion forbid the use of the knife.

3. Abscesses in the Female Breast:—Describe their causes, situation, progress, and treatment.

4. What are the distinctive characteristics, in symptoms and progress, of Cancer of the Breast, and of Chronic Glandular Mamary Tumour (Adenocele)? Describe the appearances of each on section, and under the microscope.

INJURIES AND DISEASES OF THE JOINTS.

1. What are the diagnostic signs of chronic rheumatic arthritis of the Hip-joint? Describe the pathological changes observed in such cases after death.

2. Give the various dislocations of the Shoulder Joint, with the method of reducing each variety; and in case of being unsuccessful in your first attempt, state the means to be pursued to secure a more fortunate result of other trials.

3. Mention the different simple dislocations which occur at the Elbow, and at the superior radio-ulnar joints; state the diagnostic symptoms, and the best treatment of each injury.

4. What are the consequences of a wound *into* a healthy Knee-joint? and what morbid changes may occur within the joint from the injury? State your opinion whether suppuration in the joint is necessarily fatal to its recovery.

5. Under what circumstances would you excise the Knee-joint? Describe, step by step, the manner in which you would perform the operation.

6. With what form of Fracture is Dislocation of both the bones of the Forearm backwards at the elbow liable to be confounded? How are these injuries to be distinguished, and how is each to be treated?

7. Describe the early and acute stages of Inflam-

mation of the Hip-joint in a child, and mention the constitutional and local treatment you would adopt.

8. Name and describe the different diseases of the Knee-joint, and give as comprehensive a view of such cases as the time for this examination will permit.

9. Describe the various dislocations of the Femur at the Hip-joint, and the signs of the injury, according to the several positions of the displaced bone; distinguishing between each form of dislocation, and other accidents for which it may be mistaken; give the method of reduction in each case respectively, mentioning the general, as well as the local measures necessary.

10. Under what circumstances of disease or injury is excision of the head of the humerus preferable to amputation at the shoulder-joint?

11. How would you discriminate between a fracture of the neck of the Femur, a dislocation of the Hip-joint, or a considerable contusion and swelling of the soft parts in the neighbourhood of the Acetabulum? What is the age, constitution, and sex of the person, in whom a fracture of the neck of the Femur most commonly occurs? Give the treatment which you would pursue in such a case through its various stages, with the amount of success which you would expect; state also the condition in which you are likely to find the parts on a *post-mortem* examination at a remote period after the accident.

12. Mention the different kinds of dislocations of the Ankle-joint; give the method of reducing each kind of dislocation of this joint, and the subsequent management of such cases; you will describe the treatment to be pursued, both locally and constitutionally, of a compound dislocation inwards of the ankle-joint, in which the lower head of the tibia protrudes, attended with much laceration of, and bloody oozing from, the surrounding soft parts; finally, you will state the special circumstances which would induce you in such cases to recommend the amputation of the limb.

13. How is acute synovitis of the Knee-joint usually produced? Mention the signs and symptoms by which it is characterised; and state how you would treat it.

VENEREAL DISEASES.

1. At what time after infection does Gonorrhœa generally commence? What is the seat and nature of that disease? What are its effects in mild and in severe cases, and what is the appropriate treatment in *different cases*?

2. What are the symptoms and what is the treatment of Congenital Syphilis?

3. State the various symptoms and stages of a mild and virulent Gonorrhœa in both sexes; describe the condition of the different parts of the Urethra in

the various stages of this disease, and note the discharges for which Gonorrhœa is occasionally mistaken, both in the male and female, and how such mistakes are to be avoided; give the treatment to be pursued in the mildest, as well as the most aggravated forms of this disease in both sexes.

4. State in what forms of primary or of constitutional syphilis you would give mercury, and under what constitutional conditions you would withhold it. State also in what class of cases Iodide of Potassium should be preferred.

5. Describe the appearances of an ordinary Syphilitic Sore, and mention the different forms of Secondary Syphilitic Eruption.

DISEASES AND INJURIES OF MUSCLES, TENDONS, AND BURSÆ.

1. Describe the signs and give the treatment of Acute and of Chronic Inflammation of the Superficial Bursæ of the Olecranon, and of the Patella. Describe also the symptoms and treatment of enlargement of the deep palmar Bursæ.

2. To what morbid changes are Bursæ liable? Give examples, and mention such modes of treatment as you think most eligible.

SURGICAL DISEASES AND INJURIES OF THE RECTUM AND ANUS.

1. What are the causes producing abscess of the lower part of the Rectum; what are its consequences; and what treatment is to be adopted?

2. Mention the symptoms, and describe the treatment of Fissure of the Anus.

3. Give the pathological causes of hæmorrhoids, and mention the treatment, palliative and radical, which you would adopt.

4. Describe the symptoms of Fistula in Ano; give the pathology of this disease, and explain the mode of operating now usually adopted.

5. How would you treat Prolapsus Ani in a child four years old, and also in the adult?

6. Mention the various forms of stricture to which the rectum is liable, and the diagnosis between simple stricture and the narrowing of the canal due to organic disease.

INJURIES AND DISEASES OF THE VEINS.

1. Describe the appearance and pathological condition of a 'Varicose Leg;' the causes which may have produced it; the consequences to which it may lead; the treatment for its relief or cure.

2. Mention the symptoms of inflammation occurring in veins, and how would you treat them?

3. Distinguish between Idiopathic and Traumatic Phlebitis.

4. Give the pathology of Embolism.

DISEASES OF THE SKIN.

1. State the difference between a Carbuncle, a Boil, and any other phlegmonous swelling; give the symptoms and appearance by which you can discover their nature and classification. State the age, constitution, mode of life, atmospheric influence, or any other causes which are favourable to their production. Describe the treatment, both locally and constitutionally, of each variety, whether they come on in a mild or threatening form.

2. Give an account of the several affections of the skin due to syphilis, and the treatment adopted for the cure of each.

DISEASES AND INJURIES OF THE NECK.

1. What are the local signs, and most probable cause and treatment, of post pharyngeal abscess?

2. Describe the different kinds of wounds which are most commonly met with from attempts having

been made by persons intending to destroy themselves on any of the parts situated between the lower Jaw and the Sternum. Give the treatment, both locally and generally, to be adopted, either immediately on the injury being inflicted, or subsequently through the different stages.

3. Mention the causes of stricture or obstruction of the Œsophagus; state explicitly the diagnostic signs of the various forms, and also their proper treatment.

4. Describe the diseases of the Tonsils in children, the causes of the frequency, the effects, immediate and remote, of their enlargement; and point out the best local and constitutional treatment of diseased tonsils.

5. Describe the diseases of the Thyroid Gland, and give the appropriate treatment for each case.

MORBID GROWTHS AND TUMOURS.

1. State the method of diagnosis between a cancerous and a Recurring Fibroid Tumour, before and after removal by an operation; and the results to the patient (local and general) to be looked for after the removal of those growths respectively.

2. Describe Epithelial Cancer, and mention the external parts liable to be attacked with it, and the surgical treatment proper for its removal from those parts.

3. In what situations are Fatty Tumours found? Give their diagnostic signs and treatment.

4. Give the pathology of Melanosis.

5. How would you treat an osseous tumour of a long bone (say the femur) in a young subject?

6. At what period of life are cartilaginous tumours most frequent? Describe their internal structure.

INJURIES AND DISEASES OF ARTERIES.

1. What are the symptoms indicating a laceration of the posterior Tibial artery, without external wound, in the upper third of the leg? Describe in detail what would be the proper treatment of such a case.

2. What is Inguinal Aneurism, and its probable causes? Give the diseases with which it may be confounded, and the mode of detection; describe the operation of tying the lower or upper part of the external Iliac, or the common Iliac Artery, mentioning the circumstances which make it necessary to secure the latter vessel, and the subsequent treatment of the patient.

3. Describe the history, symptoms, and signs of a Popliteal Aneurism, from its first appearance to a very advanced stage of the disease; mention the diseases for which Popliteal Aneurism has been mistaken, and how such mistakes are to be avoided;

trace the relative anatomy of the Femoral Artery and contiguous parts from the origin of the Profunda to the arrival of the artery in the Ham; describe the operation of tying the Femoral Artery in the upper third of the thigh for the cure of Popliteal Aneurism; state the processes which subsequently take place in the Aneurism by which its cure is ultimately accomplished; name the principal channels through which the circulation of the limb is carried on after the cure of a Popliteal Aneurism by the ligature of the femoral artery in the upper third of the thigh; briefly mention the conditions which after this operation sometimes prevent the cure of the disease, and those which endanger the limb or threaten life, and the proceedings that you would adopt under such circumstances.

4. Describe the symptoms *immediate* and *subsequent*, which are likely to follow a wound (say with a penknife) of the Femoral Artery in the middle of the thigh. Mention the treatment which may possibly be required after such an injury.

DISEASES OF THE MALE GENITALS.

1. State the various injuries, diseases, and conditions of the Testicle and Spermatic Chord, which may arise from natural, accidental, or congenital causes; describe such symptoms and appearances of

the testicle or chord which may enable you to distinguish one disease from another, with the treatment to be followed in each variety, according to the symptoms you have sketched out.

2. Give the Diagnosis and the treatment of each of the following forms of Hydrocele in very early life: The common form, the congenital, and the encysted. Refer to any case or cases that have been under your observation.

3. How would you distinguish the nature of a scrotal swelling produced by the following different causes, viz.: 1. Hydrocele of the tunica vaginalis; 2. Hæmatocele; 3. Hernia; 4. Varicocele; 5. Diseases of the testicle?

4. Describe Phymosis and Paraphymosis; mention their causes, the various local pathological conditions which they produce, and their appropriate treatment.

5. Give a description of varicocele of the spermatic cord, its causes, symptoms, and treatment.

6. Describe the various diseases of the Testicle and Spermatic Chord, which are likely to yield to general and local treatment: you will further describe the appearances, symptoms, and diseases of this gland which require removal by the operation of Castration; the method of performing which you will detail, with the untoward circumstances which sometimes arise, either at the time or subsequently; finally, you will mention such diseases of the Testicle, Scrotum, or neighbouring parts, as would either

make you doubtful of the success of Castration, or induce you to abandon it altogether, stating the reasons upon which you form these opinions.

7. What is a Hydrocele, and what are its causes, constitutional or local? Describe the general condition of the sac in which the fluid is contained, as well as of the contiguous structures, and the properties of the fluid itself. Enumerate the diseases of the Testicle for which hydrocele is liable to be mistaken; state the signs and means by which you would discriminate it from them, as well as from hydrocele of the chord, hæmatocele or hernia. Describe the circumstances which would induce you to select the palliative or the radical mode of treatment; and if the latter, state which of the various modes of effecting that object you would prefer, and briefly describe the manner in which you would execute it.

DISEASES OF THE EYE.

1. What is a Cataract? Describe the probable causes, and the periods of life, at which it most commonly appears. Give the symptoms of a Cataract, from its earliest threatenings to its final formation, as also the diseases with which in its fresh stages it may be confounded. Numerate the varieties of Cataract, with the favourable and unfavourable circumstances for an operation; and describe the con-

dition of the Eye, and general health, which forbid one.

2. Give an account of the appearance of the Fundus of the healthy Eye, as observed with an Ophthalmoscope; and of any morbid conditions occasioning blindness which you have seen by aid of the same instrument, with their treatment.

3. Describe Iritis; the causes, appearances, symptoms, varieties, morbid conditions, and the treatment in different circumstances.

4. Describe the Ophthalmia of new-born children; and mention the morbid changes of the eye which may result from the disease, if unchecked. State the proper treatment of the early and acute stages. Write, in full, any prescriptions that may be required.

5. Describe Ophthalmia Tarsi (Tinea Ciliaris) and its treatment; state also the common effects of neglect or bad management of the early stages of the disease.

6. Give an account of Purulent Ophthalmia, its varieties, causes, and characteristic symptoms, its injurious effects, and the right treatment.

7. What are the appearances, symptoms, distinguishing signs, and effects of acute and chronic inflammation of the tunica conjunctiva of the eye? How would you decide whether the inflammation arises from a local, constitutional, or specific cause? Describe the treatment to be pursued through the different stages of each variety respectively, both in the infant and the adult.

INJURIES TO THE ABDOMEN.

1. What is an Inguinal Hernia? How does an oblique Inguinal Hernia differ from a direct one, in its relations to the Epigastric Artery and Spermatic Chord? Give the contents of the Hernial Sac, with the various conditions in which they may be found. Detail the symptoms and mode of treatment of an oblique Strangulated Hernia; and when an operation is required, give the mode of performing it, with the subsequent management of the patient, under favourable or dangerous symptoms.

2. What is a Femoral Hernia? Describe the symptoms and treatment of a Femoral Hernia, when in a strangulated state; and when an operation is required, give the method of performing it, with the subsequent management of the case, up to a favourable, or any other termination.

3. Enumerate the various diseases to which the lower part of the Rectum and Anus are liable; give the method of performing the operation required for a fistula in Ano, when in a simple or complicated form, with the subsequent treatment of the case according to the symptoms which are likely to arise.

4. Describe the Symptoms and the Treatment of Peritonitis following an operation for Strangulated Hernia. Prescriptions for medicines to be written in full. Give the outline of any illustrative case

you may have observed; and if death occurre
the leading facts of the dissection.

5. What are the diagnostic signs of Ascites of Ovarian Dropsy? Describe the operation Ascites, and mention the precautions to be obser in its performance.

DISEASES AND INJURIES OF THE FACE AND NOSE.

1. Describe the various Polypi of the Nose, and its communicating cavities, whether of a mild or malignant character; you will give the situation, attachment, appearance, symptoms, and mode of treatment of each variety of Polypus, with the probable termination; you may further illustrate your observations by the details of any cases which may have fallen under your notice.

2. Describe the diseases (not including congenital malformations) which affect the Lips and Tongue, and state the treatment you would adopt for each of them.

3. What different kinds of swellings and tumours may be found in the region at the angle of the lower jaw?

INJURIES AND DISEASES OF THE HANDS AND FEET.

1. Describe onychia maligna, and its treatment. Prescriptions to be written in full.

2. Describe the treatment for hæmorrhage from a wound in the Palm of the Hand.

3. Describe the condition of the Foot in *talipes varus*, the obstacles which oppose its restoration to the normal state, and the measures commonly required for overcoming them.

4. Name the muscles (giving their attachments) by which deformity is produced or maintained in the following affections, viz.—

1, Talipes equinus; 2, Talipes Varus; 3, Talipes valgus.

DISEASES OF THE URINARY ORGANS.

1. Give an outline of the morbid conditions of the Kidney known as 'Bright's disease.' State how the existence of that disease may be determined during life, and how it is injurious to health, so as to render the performance of a surgical operation unadvisable.

2. What are the pathological conditions which may be produced by a permanent Stricture—(1) upon the urethra behind the Stricture, (2) upon the urinary bladder, (3) upon the kidneys?

3. Describe the changes which may take place in the Prostate Gland of old persons, and the symptoms to which those changes may give rise; and state the treatment you would adopt.

4. State the usual cause of Retention of Urine in a young man, and the method of treatment.

5. Describe the diseases of the Prostate Gland, the changes and symptoms to which it may give rise, and the treatment required.

6. Describe the different kinds of urinary calculi, and the appearances which they present, noticing in mixed calculi the order in which the deposits commonly take place, and stating the reasons for the changes in the composition of the concretions.

7. Describe the appearances and composition of the several kinds of Sand and Gravel deposited by the Urine in disease, and the methods by which they may be distinguished from each other; enumerate the causes, symptoms, and mode of treatment of each kind respectively.

8. Give the causes, symptoms and treatment of an inflammatory affection of the Prostate Gland in young subjects; and of a chronic enlargement of the same Gland in more advanced life. Describe fully your treatment, both when the urine is retained, as well as when it is continually dribbling away; and when the disease is in old subjects, terminating in death, you will give the morbid appearances of the parts, which you expect to find, according to the *symptoms* which you have had to treat.

9. In what different situations may Urinary Calculi be found? Describe the symptoms and treatment to be pursued according to their various positions; and when it is necessary to remove a stone from the bladder, you will give the different operations which have been recommended, saying which you would prefer, with your reasons for such preference. Describe the method of performing the operation which you have selected, with the subsequent management of the case, whether under favourable or dangerous symptoms.

10. Enumerate the symptoms of Stone in the male Bladder; mention other diseases which may produce similar symptoms, and the means which you would employ to determine the real nature of the disease.

11. Describe the effects which Stone in the Bladder produces upon that and upon other organs when allowed to run its course. Briefly describe the lateral operation for Lithotomy and the after-treatment; state your reasons for preferring the instrument which you would employ for making the opening into the bladder; mention the most frequent causes of death after the operation of Lithotomy. Describe the operation of Lithotrity, and state the circumstances which would induce you in some cases to prefer Lithotomy to Lithotrity, and *vice versâ*.

12. Describe the treatment which your observation

and experience would lead you to adopt for the relief and cure of Permanent Stricture of the Urethra.

13. Mention the causes which may produce Extravasation of Urine into the Perineum; state the direction it takes, and the reason for that direction; state also the local and constitutional symptoms which attend it, and the treatment required.

14. What treatment would you adopt in severe contusion of the male Perineum; in a patient for whom you could pass a catheter into the bladder, and also in another for whom you could not do so? Give reasons for adopting any special method of treatment in each of these conditions.

OPERATIONS.

1. Name the parts which are divided in an operation at the Elbow-joint.

2. Describe the course and relations of the left common iliac artery; and the steps of an operation required to secure it.

3. Describe the situation, and method of performance of each of the various operations which may be required for the partial or complete removal of one, or more, of the tarsal or metatarsal bones in injuries or diseases of the foot, with the favourable or unfo-

ward symptoms which may arise after such operations.

4. Detail the different modes of operating for Cataract, mentioning the one you would prefer, with your reasons for such preference in different cases; give the preparatory and subsequent treatment, both locally and generally, through the various stages, up to the termination of the case, either in a perfect or partial recovery of sight or in total blindness.

5. Describe accurately the successive stages of an operation for Strangulated Femoral Hernia, mentioning the various complications and difficulties which may occur, and how you would meet them. State the causes of fatality in this form of Hernia, and the morbid changes observable after death.

6. Describe, in detail, the steps of the operation for tying the Femoral Artery at the junction of the upper third with the middle third of the Thigh; state the relative position of the parts met with, and mention those to be avoided during the operation. Enumerate the instruments required in the operation.

7. Describe the operations for tapping for Ascites, and for Hydrocele, and the precautions to be observed in these cases.

8. State at which side of the Humerus, after a circular Amputation through the middle of the left-arm, the principal Divided Arteries are to be looked

for, and how bleeding from them is to be hindered. Mention, in detail, how the stump is to be dressed, immediately and subsequently, till it is healed.

9. Describe the operation for Ascites, and mention the precautions to be observed in its performance.

10. Describe Amputation in the Thigh by circular, flap, oval, and rectangular methods; and state which you would prefer, with your reasons for preference.

11. Describe the operations for Stone in the Bladder as performed by Cheselden below the pubis.

12. Name and describe the different kinds of Amputations. State the circumstances under which you would select one kind in preference to any other. Say which operation you would prefer in general, and give your reasons for the preference.

13. State what parts are cut through in the lateral operation of Lithotomy; what blood-vessels are in the way of the knife or are in danger of being wounded; and how they may best be avoided.

14. Describe the different methods of performing the operation of removing the Arm at the Shoulder-joint, saying which you would prefer, and your reasons for that preference. Note down the anatomy of the parts which you would cut through or expose as you proceed; then give the mode of securing the bleeding vessels, the dressing of the wound, together

with the after-treatment of the case, under favourable or unfavourable circumstances, whether from local or constitutional causes.

15. Name the structures which must necessarily be divided or separated in the operation for the removal of the Superior Maxillary Bone.

16. Describe the operation of Amputation at the Ankle-joint; and enumerate the various structures you would divide in their several relations to each other.

17. Describe the course and relations of the Posterior Tibial Artery, from its origin to its bifurcation; and detail the steps of the operation for tying it at the junction of its upper and middle thirds.

18. What are the boundaries of the Crural Arch, and how is it occupied? Describe briefly the principal surgical operations you may be called upon to perform in the immediate neighbourhood of this region.

19. Describe the operation of Amputation at the Hip-joint; and enumerate, in their several relations to each other, the parts you would divide, and what vessels would require to be secured.

MISCELLANEOUS.

1. Define a *Sinus*; and explain what are the obstacles to its healing. Describe the various modes of treating Sinuses under different circumstances; and give your reasons for adopting any particular method of treatment.

2. Name the different forms of Erysipelas; describe the appearances, symptoms, and progress of Phlegmonous Erysipelas; state the most frequent causes of that disease, also its pathology; mention the principal modes of treatment which are employed, and state those which you should adopt.

3. Sketch the more recent views as to the mode by which pus may be introduced into the blood. Describe the pathological causes, diagnostic symptoms, and treatment of Pyæmia.

4. What is Senile Gangrene? In what parts of the body or extremities does it most commonly show itself? Note the age, habits, and conditions of life of the individuals who are most open to its attack. Describe the symptoms, causes, and treatment of senile gangrene, whether it comes on in a chronic, obscure, or more rapid form, with the probable termination of the case.

5. What is meant by the terms Emphysema, Empyema, Pneumothorax, Hæmathorax? How may each of these be produced by Fracture of the Ribs?

What are the Physical signs of each of these conditions?

6. Name the Tumours which occur at the Groin; and state how they may be distinguished one from the other.

7. Describe the various forms of Gangrene; the pathological causes, and the appropriate treatment of each kind.

8. Describe Phlegmonous Erysipelas (*e.g.* of the Forearm). State the general and local treatment you would pursue in such a case, and the reasons for your treatment.

9. State the conditions, constitutional and local, which would render amputation expedient for a Compound Fracture of the Leg.

10. State the physical signs of disease of the Lung which would render a surgical operation unadvisable.

11. Describe an Ulcer of the Leg termed 'Varicose;' mention its usual site and its causes; explain how ulceration is induced, and the reasons for the treatment you may adopt for its cure.

12. Name the various diseases found in the axilla; and describe those which you think most common.

13. Describe the local and general causes of death of the Primary and Secondary amputations for injury, through the thigh and at the hip-joint, and likewise for simple and malignant disease of the lower extremity. Enumerate the pathological conditions which in your opinion would necessitate the amputations referred to.

14. What is Suppuration? Give your opinion how it occurs; state its various aspects on, or in, different tissues; give a familiar example; state its probable cause, symptoms, progress, and the treatment which you would follow throughout.

15. What is Caries, and what is Necrosis? State the leading distinctions between these diseases, and such minute points as you fancy, may lead to a clear diagnosis in each case; describe the treatment of both, and give some illustrated cases.

16. What is Erysipelas? Describe the different kinds which are usually seen, and give the treatment of each.

17. What is Mortification? Give the different names associated with this condition, and explain the meaning you attach to each. Describe the pathology, and give the appropriate treatment, of each form of the disease.

18. What is Delirium Tremens Traumaticum? Under what circumstances is it most likely to occur? Describe the symptoms, and how they are to be distinguished from those of inflammation of the brain; and mention the proper treatment, under the mildest and most aggravated forms.

19. What is an ulcer? Describe the processes by which Ulcers are formed and repaired. Give the names and classification of those Ulcers which are found on the surface of the body; describe the appearances and symptoms which enable you to discriminate

between the different varieties; write down the mode of treatment to be pursued, both locally and constitutionally, of each, whether in a simple or aggravated form. You need not enter on the management of such as are of a syphilitic or cancerous nature.

20. Describe the process of ossification by which the union of a simple or compound fracture of a Cylindrical Bone is accomplished. State the various causes which may not only retard but prevent the union; for instance, of a simple fracture of a thigh-bone, about its middle third. Enumerate the different modes of the treatment which are employed for the cure of ununited fractures.

21. Give the classification of wounds which arise from external violence; describe the local and general treatment of each variety respectively, whether under favourable or dangerous symptoms; also point out the kind of wounds, and the circumstances generally, in which Erysipelatous Inflammation is likely to come on in such cases.

22. Describe the process of reparation which Nature adopts to unite Fractured Bone, Divided Tendon, Muscle, Nerve, Skin, Mucous and Serous Membrane.

23. Mention the structures which must be divided in the respective operations for Hydrothorax, Ascites Hydrocele, and Fistula in Ano.

24. Describe the Surgical Anatomy of the Sar-

torius Muscle in reference to deligation of the Femoral Artery.

25. Explain anatomically the course which the blood takes to the lower extremity after the External Iliac Artery has been tied.

26. Describe the situation, extent, and attachments of the Superficial Perineal Fascia. Explain how it limits Extravasation of Urine in certain directions, and allows it to spread in others.

27. State under what circumstances and conditions it may be considered expedient to open the Trachea. Describe the dangers and difficulties of the operation, the method of performing it, and the after-treatment.

28. Name the different causes which may produce obstruction of the Bowels within the abdominal cavity (*i.e.* excluding Hernia); and describe the *post-mortem* condition of the intestinal canal above and below the seat of obstruction. State if any of these affections are remediable by surgical treatment; and if so, describe the treatments.

29. How would you distinguish a Burn in which the injured skin is entirely destroyed, and how would you treat it?

MEDICINE.

GENERAL DISEASES.

1. Give an outline of the principles on which the treatment of dropsical effusions should be conducted, including the remedies more especially applicable to special forms of Dropsy.

2. What are the more common sources of pyogenic fever? Sketch the symptoms which indicate contamination of the blood by pus; and explain the mode by which it becomes introduced into the circulation.

3. Describe Scirrhus or hard cancer, Encephaloid or soft cancer, and Colloid or gelatiniform cancer, their relations to each other, and their respective peculiarities in reference to seat, symptoms, and course. State the reasons that may be advanced for and against classing epithelial growths with cancer.

4. Under what circumstances does urea accumulate in the blood? What are the symptoms and results of uræmic poisoning? How is its presence detected?

5. Enumerate the causes under the influence of which Hæmatemesis may arise. Explain the sources of the hæmorrhage, and the principles of treatment.

6. Give the symptoms, forms, and treatment of Purpura.

7. Describe the symptoms that denote the entrance of purulent matter into the blood. Give the more probable explanation of the morbid phenomena, including the theory of disseminated abscesses.

8. What are the pathological causes of Albumenuria? Give the tests for its detection, and the sources of fallacy to be guarded against.

9. Sketch the views most generally entertained by modern pathologists of the nature and mode of production of Tubercle.

10. Give an account of the varieties of cancerous formations, including their general and microscopic characters. Sketch shortly the arguments in support of the constitutional origin of cancer, and those that have been adduced to prove that it is a local disease.

11. Sketch the treatment of acute Rheumatism. Describe the different forms and complications of the disease.

12. What are the general and special features of the Carcinomatous Cachexia? State in what way these are modified by the form of the cancer, the organ it affects, and the age of the patient.

13. What are the causes of Muscular Atrophy? How would you distinguish between them in special cases, and in what mode would you treat the affection?

14. What are the forms of Dropsy of the Areolar

tissue? Give the diagnosis of the following kinds:—

Dropsy caused—By great feebleness of the heart's action;
- By obstruction in certain valves (which must be specified);
- By obstruction in *vena cava* inferior (the causes must be given);
- By anæmia;
- By kidney disease.

15. Give the pathology, symptoms and treatment of gout.

DISEASES OF THE ORGANS OF RESPIRATION AND OF CIRCULATION.

1. Describe the anatomical characters, physical signs, and results of Cardiac Hypertrophy.

2. Describe the diagnostic symptoms, nature, and treatment of Diphtheritis.

3. Describe the pathological changes to which the Air-tubes are liable.

4. Describe the different kinds of effusion into the pleural sac, their pathological causes, diagnosis, and treatment.

5. Sketch the anatomical characters and diagnostic signs of Inflammation as it occurs in the tissues of the lung.

6. Describe the pathological causes of pulmonary Emphysema.

7. Describe the general and local symptoms of Empyema, its diagnosis, terminations, and treatment.

8. Explain how pneumo-thorax may arise. Give its physical signs and treatment.

9. Describe the anatomical characters, physical signs, and results of inflammation of the pleura.

10. Explain the pathological changes in contraction of the chest after pleurisy.

11. Describe the diagnostic symptoms, nature, and treatment of angina pectoris.

12. Describe the symptoms of pneumonia, general and local, its anatomical characters, diagnosis, and treatment.

13. Describe the causes, diagnostic symptoms, and treatment of hydro-pericardium. Explain also how secondary effusions into the pericardium may take place.

14. Enumerate the principal varieties in the expectoration in pulmonary diseases. What are the diagnostic indications to be drawn from each?

15. Describe the anatomical characters, diagnostic symptoms and treatment of laryngitis.

16. Describe briefly the conditions of the heart (organic and functional) which are accompanied by abnormal sounds.

17. What information as to the condition of the Lungs and Heart is to be obtained by the inspection *of the thorax.*

18. What are the physical signs detected by auscultation and percussion of Pulmonary Phthisis in the early as well as in the advanced stage? State briefly the mechanism of their production, and their relative diagnostic value.

19. Sketch the treatment of Chronic Pleurisy.

20. Describe the anatomical characters of Fatty Degeneration of the Heart, its etiology, symptoms, secondary lesions, and treatment.

21. By what physical signs do you distinguish Disease of the *right* Auriculo-ventricular orifice obstructing the onward passage of the blood;

Disease of the *right* Auriculo-ventricular orifice permitting regurgitation of the blood from the ventricle into the auricle;

Disease of the *left* Auriculo-ventricular orifice obstructing the onward passage of the blood;

Disease of the *left* Auriculo-ventricular orifice permitting regurgitation of the blood from the ventricle into the auricle;

Disease of the orifice of the Pulmonary Artery obstructing the entrance of the blood;

Disease of the orifice of the Pulmonary Artery preventing its closure;

Disease of the orifice of the Aorta obstructing the entrance of the blood;

Disease of the orifice of the Aorta preventing its closure?

What is the order of frequency with which these lesions of structure occur; and what are their effects severally on the substance and cavities of the heart, and on the other orifices?

22. What are the physical signs and symptoms of Emphysema of the Lungs?

23. What symptoms directly due to derangements of the nervous system accompany and follow Diphtheria? What is the prognosis when such symptoms are present, and how should they be treated?

24. Describe the lesions of structure which affect the arteries, exclusive of aneurism.

25. Explain the nature of Empyema and Hydrothorax respectively, their pathological causes, and treatment.

26. Describe the anatomical characters, diagnostic signs, and causes of pulmonary gangrene.

27. Describe the varieties in the pulse, and the practical inferences to be deduced from them.

28. Describe the conditions of the heart (organic and functional), which are accompanied by morbid sounds. Show how they may be distinguished from each other.

29. Describe the causes by which the heart may be displaced.

30. Mention the circumstances which determine he prognosis in diseases of the heart.

31. Describe how pneumo-thorax may be produced, its signs and treatment.

32. Give the anatomical characters, diagnostic symptoms, and treatment of Pericarditis.

33. What are the more important causes of Pneumonia; in what kind of pneumonia would you bleed; in what give stimulants; and in what expect a favourable termination under simple treatment?

34. Describe the general and local signs of pneumonia, the changes produced in the lung, and the treatment applicable to its different stages.

35. Describe the results of Pleurisy. Under what circumstances is it advisable to evacuate the fluid by tapping? When a cure is effected, describe the changes that take place in the affected side.

36. Describe the pathological causes and treatment of Pulmonary Hæmorrhage.

37. Describe the physical signs of pneumonia, emphysema, and pleuritic effusion respectively, with a view to their differential diagnosis.

38. Describe the anatomical characters, diagnostic symptoms, and progress of aneurism of the thoracic aorta.

39. Describe the more common functional affections of the heart, their causes, and how they are distinguished from the structural diseases of that organ.

40. Describe the anatomical characters of inflammation as it occurs in the different tissues of the lung.

41. Describe the most usual morbid conditions of

Arteries. What are the signs and symptoms of aneurism of the Aorta, seated at the following points:—at the posterior part of the transverse portion of the arch; in the abdomen, just below the diaphragm.

42. Explain how Serous Effusion takes place in Cardiac Dropsy.

43. Sketch the diseases to which the Windpipe (including the larynx) is liable, with an outline of their treatment.

44. Describe the anatomical characters, causes and consequences of Inflammation of Veins.

45. Describe the anatomical characters of Pulmonary Emphysema, its causes, forms, and physical signs.

46. Describe the complications that occasionally arise in the progress of Hooping-cough, and the appropriate treatment.

47. Describe the morbid Breath sounds, their physical causes, and pathological significations.

48. Describe the symptoms attendant on Aneurisms of the Arch of the Aorta.

49. What is the pathological significance of Intermittent Pulse?

50. Give the pathology, symptoms, and treatment of Croup.

51. State the symptoms and treatment of Acute and Chronic Bronchitis. Describe the Chronic Bronchitis of the aged.

52. Describe the anatomical causes of Cyanosis.

VENEREAL DISEASES.

1. Describe the lesions found after death from Congenital Syphilis, its symptoms and treatment, and the influence which Father and Mother separately exert on the transmission of the disease to the offspring.

2. Describe the appearance of a lad who is the subject of well-marked inherited Syphilis; also mention some of the complaints amenable to treatment to which he is liable.

3. Give the treatment of Gonorrhœa in the female.

4. Give the pathological appearances of Hunterian Chancre, and mention the best modes of treatment.

DISEASES OF THE URINARY ORGANS.

1. When blood is mixed with urine, whence may it proceed, and how should it be treated.

2. Describe the anatomical characters, diagnostic symptoms, and results of acute Nephritis. Sketch the treatment.

3. Give the treatment of Convulsions secondary to Bright's disease.

4. Describe the several varieties of Urinary Deposits. Describe the symptoms accompanying the passage of a renal calculus through the ureter. Sketch the treatment applicable to the lithic, phosphatic and oxalic diatheses respectively.

5. Sketch the condition of the Urine in Diabetes. How is the morbid impregnation supposed to arise? By what chemical tests is its presence detected? Explain the indications to be observed in the treatment, and measures best adapted to fulfil them.

6. What are the pathological causes of albuminuria? Describe the changes which the blood and the urine undergo in the progress of this disease, with its secondary affections or complications. Give an outline of the treatment.

7. Describe the various forms of inflammation of the kidneys, their anatomical characters, symptoms, and treatment.

8. When blood is discharged by the urethra, mention its sources, and the circumstances which determine the diagnosis.

9. Sketch the treatment of Diabetes, stating the grounds on which different modes have been proposed, and describe the manner of ascertaining the presence of sugar in the urine.

10. Describe the symptoms characterising the passage of a urinary calculus into the bladder, and state how you would treat such a case.

11. Detail the treatment of Renal Dropsy in its early as well as more advanced stage.

12. Describe the principal morbid conditions of the urine and their treatment.

13. Describe the treatment of Granular Disease of

the Kidney, in the early as well as the advanced stage. Mention its more important complications and their management.

DISEASES OF THE SKIN.

1. Enumerate the diseases of the Skin attended by the development of parasitic vegetable growths; and sketch the diagnostic characters of each. What part does the parasite play in these diseases?

2. Sketch the forms of syphilitic diseases of the skin.

3. Sketch the pustular diseases of the skin.

4. Sketch the characteristic appearances and forms of—1, Ecthyma. 2, Herpes. 3, Lepra.

5. Describe the diagnostic characters, forms, and treatment of impetigo.

6. Mention the vesicular diseases of the skin, and give your treatment for each variety.

7. Give the treatment adopted for the cure of Lichen.

8. Mention the commonest forms of cutaneous disease of the scalp in children and their treatment.

9. Describe the varieties of Scabies as distinguished by the pathological anatomy of the affection, and give the treatment for each variety.

10. Sketch the diagnostic characters, forms, and treatment of ekzema.

DISEASES OF THE ABDOMINAL WALLS.

1. Describe the pathological causes of Ascites, and the principles on which its treatment should be conducted.

2. Describe the pathological causes, symptoms, and treatment of effusion into the peritoneal cavity.

3. What are the principal diseases of the Peritoneum? State under what circumstances they occur, and give the symptoms.

4. Mention the causes which may give rise to abscess in the Abdominal Parietes, the diagnosis and treatment.

5. State the nature of Phantom or Muscular Tumours occurring in the walls of the abdomen, and mention the chief points of error in diagnosis.

DISEASES OF THE SPLEEN.

Mention the principal diseases to which the spleen is liable, and how they may be recognised during life. State also the mode of treatment you would adopt.

DISEASES OF THE LIVER.

1. Describe the anatomical characters of cirrhosis. Explain its nature and consequences. Sketch its treatment.

2. Describe the more important structural diseases of the Liver, and the consequences to which they give rise.

3. Describe the morbid conditions which give rise to Enlargement of the Liver.

4. Describe the symptoms characterising the passage of a gall-stone; and state how you would treat such a case.

5. Give the symptoms and treatment of inflammation of the Liver.

6. State the pathology, symptoms, and treatment of Jaundice.

7. How would you treat Hepatic Abscess; and what symptoms would lead you to give a favourable prognosis?

DISEASES OF THE PANCREAS.

What are the principal diseases of the Pancreas; and how may they be recognised during life?

DISEASES OF THE ALIMENTARY CANAL.

1. Describe the symptons of scirrhous pylorus, and state how this lesion is to be distinguished during life from chronic ulcer of the stomach.

2. Describe the various forms of dyspepsia, including an account of the secondary or remote affections induced by gastric disorders. Give an outline of the treatment.

3. Describe the more important organic diseases of the stomach, with the diagnostic symptoms of each.

4. What are the pathological causes of intestinal hæmorrhage? Sketch the indications of treatment, and the appropriate remedies.

5. Give an outline of the pathological causes of intestinal obstructions, the prognosis and treatment.

6. Describe the phenomena of Ulceration as it is observed in the sub-diaphragmatic portion of the alimentary canal, pointing out the portions most frequently the seat of this process, with the characteristic symptoms.

7. Where is stricture of the colon most likely to occur? What are the symptoms and course? How would you treat it?

8. What are the pathological causes of diarrhœa? What are the indications to be kept in view in the treatment?

9. *Describe* the more important organic diseases

of the stomach, with the diagnostic symptoms of each.

10. Sketch the symptoms, causes, and treatment of Pyrosis.

11. Sketch the secondary affections which have their origin in dyspepsia, and their treatment, remedial and dietetic.

12. In an epidemic of Cholera there are other forms of the disease besides the collapse form. Describe the more common forms, and give the treatment.

13. Sketch the anatomical characters, diagnostic symptoms, terminations, and treatment of Inflammations of the Cœcum.

14. Describe the different forms of Angina (inflammations of the throat), their diagnostic symptoms and treatment.

15. What are the varieties of Intussusception of the Intestine found after death, their situation, their anatomical peculiarities, and the lesions of structure which accompany or dispose to their occurrence? Give the symptoms of intussusception, the modes in which it may terminate and its treatment.

16. What are the pathological causes of Ileus? What conclusions have you arrived at as to the probable results of treatment?

17. Describe the anatomical characters of Inflammation of the Digestive Mucous Membrane.

18. Describe the diagnostic symptoms, anatomical characters, and treatment of Dysentery.

19. In what portion of the intestinal canal are ulcerations most frequently found? What symptoms denote that intestinal perforation has taken place? What is desirable under such circumstances?

20. Sketch the pathological causes of Ileus. When a strangulated portion of intestine has been thrown off, describe the mode in which the solution of continuity of the intestine is repaired.

21. Describe the nature, symptoms, and treatment of Acute Colitis.

22. State the more commonly received opinions as to the pathology or nature of Epidemic Cholera. Give the arguments that have been adduced in support of its propagation by contagion. What measures (prophylactic and curative) would you advise should the Epidemic re-appear?

23. Enumerate the circumstances which lead to Obstruction of the Bowels; and describe in detail the diagnosis and treatment of the several forms of obstruction.

24. Describe a case of acute Dysentery, entering fully into its causes, symptoms, complications, treatment, and morbid appearances.

DISEASES OF THE NERVOUS SYSTEM.

1. Sketch the different forms of Palsy, their pathological causes and treatment.

2. Describe the different forms of apoplectic seizures, their pathological causes, and terminations.

3. Sketch the varieties, causes, and treatment of Headache.

4. Sketch the different forms of Insanity. How is mania to be distinguished from febrile delirium, or from delirium tremens?

5. Describe the morbid appearances in the brain in fatal apoplexy.

6. Describe the anatomical characters, diagnostic symptoms and treatment of acute hydrocephalus.

7. Describe the different forms of Softening of the Brain, their anatomical characters, symptoms, etiology, and treatment.

8. What are the symptoms of Paralysis of the Seventh pair or *facial nerves*? What circumstances influence the prognosis in paralysis of one facial nerve? How should it be treated?

9. Describe the diagnostic symptoms, forms, pathological causes, and treatment of Tetanus.

10. Mention the situations in which intra-cranial hæmorrhage may take place. When the hæmorrhage occurs in the cerebral tissue, describe the progressive changes which take place during the process of reparation.

11. Describe the anatomical characters of cerebral softening. Sketch the symptoms, tracing them from the early to the advanced stage of the disease.

12. Explain how facial palsy is to be distinguished from palsy of the face arising from cerebral disease.

13. Describe the different forms of chorea, with the various plans of treatment that have been recommended.

14. Distinguish narcotic poisoning from apoplexy, and other cerebral diseases accompanied by coma.

15. Describe the nature, varieties, morbid appearances, and treatment of Epilepsy.

16. Enumerate the forms of insanity. Sketch the characteristic features and progress of paralytic insanity (general paralysis of the insane).

17. Describe the anatomical characters, symptoms, and results of intra-cranial hæmorrhage.

18. Describe a case of General Paralysis of the insane, from its commencement to its close, giving the symptoms, causes, duration and *post-mortem* appearances.

19. Describe the Intra-cranial Lesions which give rise to Paralysis.

20. Describe the pathological causes of Facial Palsy.

21. Contrast the diagnostic characters of Arachnitis, acute Mania, and Delirium tremens. Describe the treatment applicable to each.

22. What are the indications to be kept in view in the treatment of a sudden apoplectic seizure? In

determining the question of blood-letting, contrast the circumstances which indicate its expediency, with those which render its adoption doubtful if not hazardous.

23. Describe the diseases to which the Spinal Cord is liable. Give the diagnostic symptoms and treatment of each.

24. Sketch the various forms which Hysteria assumes, and show how the diseases it simulates may be distinguished.

25. Describe the symptoms, course, and *post-mortem* appearances of Locomotor Ataxy.

26. What do you understand by the term 'Hypochondriasis;' and how is it to be distinguished from Insanity on one hand, and the effects of Disease of the Viscera on the other?

27. What are the symptoms of Concussion of the Spine, and what symptoms would lead you to form a favourable or unfavourable prognosis as to its issue.

28. Give a full account of the disease known as Cerebro-spinal Meningitis.

29. Describe the anatomical appearances of Red Softening affecting the left Corpus Striatum and optic Thalamus; and give a sketch of the probable symptoms in such a case.

FEVERS.

1. Describe the varieties, complications, and treatment of Small-pox.

2. Describe the distinctive characters, progress, and treatment of Abdominal Typhus.

3. Give an outline of the forms, pathological causes, and treatment of Puerperal Fevers.

4. Give an outline of the pathology and treatment of scarlatinal dropsy.

5. What are the chief causes of death in Scarlet Fever? Give an outline of its treatment.

6. Describe the symptoms, anatomical characters, and treatment (remedial and dietetic), of infantile remittent fever.

7. Describe the forms and treatment of Erysipelas. Mention the grounds on which it has been supposed to originate from contagion, with such facts in illustration as may have come under your observation.

8. Describe the lesions that arise in the progress of enteric (typhoid) fever, and explain in what respects this form differs from ordinary typhus.

9. Describe the symptoms, causes, and treatment of gastric remittent fever.

10. Sketch the more important secondary diseases that occur in the progress of continued fever.

11. Give a short account of Scarlet Fever and its *varieties; your* treatment of particular cases of the

disease, and the method you would adopt to prevent its propagation.

12. State the treatment appropriate to the successive stages of Small-pox. What local means would you use to prevent pitting?

13. Mention also the chief sources of danger, and give an outline of the treatment of confluent small-pox.

14. Contrast the symptoms of Typhus fever, Typhoid fever, acute Tuberculosis, Pyæmia, and Trichinosis, with a view to diagnosis. Give an account of the mode of production of the disease produced by the wanderings of the Trichinæ; and state how its occurrence should be prevented.

15. What are the more commonly received opinions as to the nature or pathology of Continued Fever? Describe (shortly) the varieties or forms, and in what circumstances they respectively differ. Give an outline of their treatment.

16. Sketch the pathological causes, symptoms, and treatment of Infantile Gastric Fever.

17. Distinguish between Erythema and Erysipelas, as to causes, symptoms, and course.

18. What are the principal distinctive symptoms of Typhoid (enteric) fever and Typhus.

MISCELLANEOUS.

1. What meanings do you attach to the term Cachexia and Diathesis. Illustrate your definitions by examples; and discuss, as fully as time may permit, the various opinions held of late years on the origin of the diseases you select as examples.

2. Describe the process of purulent formations, with examples in illustration. Explain the supposed origin of purulent deposits in organs. Sketch the symptoms and progress of purulent infection.

3. Describe exudative inflammation as it occurs in the air-passages.

4. Describe the pathology of Congestion, and explain in what circumstances it differs from inflammation. Mention its principal causes, and give examples in illustration.

5. Define the term Mortification. Describe generally its phenomena, and explain the circumstances under which it may arise in the different tissues and organs, giving examples in illustration.

6. Contrast the diseases in which the administration of opium is beneficial, with those in which its employment is either doubtful or contra indicated.

7. You are called to a patient bringing up blood from the lungs or stomach. State what the different causes of the hæmorrhage may be, and how you would treat each particular variety of it.

8. What are the principal distinguishing signs of enlargement or tumour of the Liver; of the Spleen; of the Kidney; of the Ovary; and of the Uterus.

9. Supposing you are called to a patient who has been suddenly taken ill and is entirely unconscious. What are the different conditions upon which his state may depend; and how would you distinguish them?

10. In what diseases may albumen and blood in the urine occur together or separately? How would you treat the respective cases?

11. A person is suddenly seized with violent pain in the abdomen, rapidly followed by sickness and vomiting. What are the various forms of affection which such an attack may indicate; how would you distinguish each form; and what treatment would you have recourse to for its relief?

12. Illustrate by special examples the use of the Thermometer in the diagnosis of disease.

13. Enumerate the various causes of Dyspnœa, and state the grounds upon which, in particular instances, you would base your discrimination among these causes.

14. What are the commonest causes of Vomiting? Give the treatment of each particular variety.

15. What are the conditions, both remote and immediate, of 'Loss of Consciousness,' as a symptom of disease? Describe the process of diagnosis among these conditions.

16. Contrast the following forms of disease:—

Infantile, Diphtheritic, and Saturnine Paralysis; Progressive Muscular Atrophy (wasting palsy); and Locomotor Ataxy.

17. Define and illustrate by description the following terms used by different writers on Auscultation: Puerile Respiration, Supplementary Respiration; Large Crepitation, Small Crepitation; Crepitant Râle; Large and Small Crackling; Muco-crepitation, Mucous Râle, Gurgling; Amphoric Gurgling.

18. What do you mean by the term Fever, used in its abstract sense to indicate a state accompanying many diseases? What are supposed to be the internal conditions giving rise to it.

MIDWIFERY.

1. Describe the diagnosis, causes, and treatment of spurious pains.

2. In a patient prone to severe hæmorrhage after the birth of a child, what prophylactic measures would you adopt?

3. Enumerate the causes, and describe the treatment of puerperal convulsions.

4. Describe the difficulties which are met with in the operation of Turning, and the most appropriate means for obviating them.

5. Describe the various forms in which occlusion of the os uteri is found at the end of pregnancy; and how would you treat them?

6. Describe the mechanism of Natural Labour in occipito-anterior positions of the head.

7. Describe the ordinary derangements of health connected with pregnancy, and their treatment.

8. Enumerate the changes in the breast produced by pregnancy.

9. What are the indications of commencing labour?

10. What are the symptoms during labour which would lead you to the conclusion that the pelvis is contracted in its antero-posterior diameter?

11. Describe the different species of deformed pelvis.

12. Describe the symptoms, causes, and treatment of Prolapsus of the Funis.

13. Describe the causes and treatment of retained placenta.

14. Enumerate the sources of danger to mother and child in precipitate labour.

15. Enumerate the symptoms of pregnancy; and then state which are the certain, and which the uncertain ones.

16. Describe the last stage of natural labour, and your management of it.

17. Enumerate the indications for using, and the rules for applying the forceps.

18. Describe the various forms of contracted pelvis.

19. What are the contra-indications to the use of chloroform during Labour, and how would you obviate them?

20. What is the difference between the effects produced by partial and those produced by complete prolapsus uteri?

21. What are the causes and treatment of faulty uterine action during Labour?

22. Enumerate the signs of the child's death before birth.

23. What are the indications for perforating the child's head, and the rules for performing this operation?

24. Enumerate the rules for performing the operation of Turning, and state the reasons for their being observed.

25. Describe the symptoms of Malignant Puerperal fever, its causes and treatment.

26. What is the treatment in the asphyxia of newborn children?

27. Describe the course of the head through the Pelvis in the most frequent cases of face-presentation.

28. Enumerate the different causes of the death of the Fœtus in Labour.

29. In what circumstances does Rupture of the Uterus in Labour most frequently occur? What light does Morbid Anatomy throw on the accident? What are its symptoms, and what is its appropriate treatment?

30. When the head is in the First Position, what is meant by the terms Obliquity, Flexion, Rotation, Extension and Restitution?

31. Describe the operation of Turning in a case of Arm-presentation; mention the stage of Labour at which it should be performed; and state the advantages of bringing down one or both feet.

32. What are the precautions to be observed in the administration of Ergot during Labour.

33. On what diseases of the Mother, and on what of the Ovum, does Abortion most frequently depend? Give a description of the latter.

34. Describe the changes produced in the pelvis

by Mollities Ossium; explain their mode of production, and contrast them with those which are usually occasioned by Rickets.

35. Enumerate the causes, and describe the symptoms and appropriate treatment, of Labour delayed in its first stage.

36. Describe the principal methods of inducing Premature Labour.

37. What are the ordinary sources of the origin of Puerperal Fever by Contagion and Infection?

38. Describe the chief modes of treatment of Ovarian Dropsy, and the conditions in which they may be respectively resorted to.

39. State the symptoms, diagnosis, and treatment of Pelvic Cellulitis.

40. What are the conditions as regards the safety of the mother, or fœtus, or both, in which premature labour should be induced?

41. Describe the passage of the fœtal head through the pelvis, in natural labour with the head in the first position.

42. What signs would lead you to suspect the presence of albumenuria in pregnancy? And what treatment would you adopt in such cases?

43. What is meant by a transverse presentation? How is labour in such cases sometimes terminated by nature, and what are the rules to be observed in having recourse to manual interference?

44. In protracted second stage of labour, what

circumstances call for the employment of instruments; and how would you determine whether to apply the forceps or to perform craniotomy?

45. Describe the anatomical characters of fibrous tumour of the uterus; and state the symptoms by which it is ordinarily attended.

46. Describe the changes which rickets produce in the pelvis, and the manner in which they are brought about.

47. Give the cause of sudden death in the puerperal state; and describe the chief pathological conditions found in such cases.

48. Describe the symptoms of unavoidable hæmorrhage in labour; and detail the treatment which in different circumstances is applicable in that condition.

49. Mention the symptoms which would indicate dropsy of the amnion; and state if any peculiar morbid condition is often met with in the fœtus in cases of this kind.

50. Give the diagnosis of ovarian dropsy, and state especially how it is to be distinguished from pregnancy, fibrous tumour, and ascites.

51. What are the symptoms of cancer of the uterus; and how would you distinguish between it and other forms of uterine disease with which it is sometimes confounded.

52. Describe the mode of making an external and internal manual examination of the uterus? What points can be determined by such exploration?

53 Give the mechanism of Face-presentations, with their diagnosis, prognosis, and treatment.

54. Enumerate the pathological conditions which give rise to Amenorrhœa.

55. What are the causes and treatment of Retention of the Placenta after birth of the child at full term?

56. Under what circumstances would you consider it desirable to employ the Long Forceps; and what precautions is it necessary to observe in using them?

57. Into what points is it necessary to inquire in determining as to the satisfactory progress of a woman during the first week after delivery.

58. At what periods of pregnancy is premature expulsion most frequent, and when is it most dangerous? Give your reasons.

59. Enumerate the different means of stopping hæmorrhage before labour.

60. What are the various difficulties and dangers which we are liable to meet with during the last stage of labour?

61. Enumerate the causes of Menorrhagia.

62. In presentation of the Cord, what are the circumstances which would direct you, either to leave the case to nature, to apply the forceps, or to turn the child?

63. Describe the object and modes of inducing *artificial* premature labour.

64. Describe Phlegmasia Dolens.

65. Describe the contents of the Gravid Uterus at the third month.

66. What are the pathological conditions which give rise to Uterine Hæmorrhage in the unimpregnated uterus?

67. State the type of anatomical union between the pregnant uterus and the placenta, and the probable sources of the bleeding in unavoidable and accidental hæmorrhages.

68. Give the causes and treatment of inversion of the uterus in its acute and in its chronic forms.

69. Describe the various sympathetic affections produced by pregnancy, their nature and treatment.

70. Describe the symptoms, causes, and treatment of after-pains.

71. Enumerate the advantages of putting the child early to the breast.

72. In threatened premature expulsion with hæmorrhage, how would you stop the discharge when it occurs in the first half, and when it occurs in the second half of pregnancy? Give the reasons for your treatment.

73. In threatened abortion, what may we infer from the fact of the discharge preceding the pain, and what when the pain precedes the discharge?

74. Give the diagnosis between Retroversion (during pregnancy), Inversion, Prolapsus, and Polypus of the uterus.

75. Describe the condition of a patient in the last

month of pregnancy (as regards her general health, size of uterus, &c.), and the indications for treating her, especially with reference to the labour and the puerperal state.

76. Under what circumstances is it justifiable to rupture the membranes?

77. Describe the operation of Perforation, and the different Perforators most commonly used.

78. What is understood by 'hour glass contraction of the uterus?' What dangerous conditions is it commonly associated with, and what will be the treatment?

79. Describe the phenomena of pregnancy in the third, sixth, and ninth months.

80. What is the diagnosis of a face, a nates, and an arm or shoulder presentation during the early stage of labour?

81. What treatment and precautions would you adopt previous to and after labour, with a view to prevent hæmorrhage after the birth of the child?

82. Describe the symptoms, causes, and treatment of Retroversion during pregnancy.

83. What are the different species of asphyxia neo-natorum, their diagnosis and treatment?

84. Describe the changes which the uterus undergoes during the different months of pregnancy, as shown by external and vaginal examination.

85. In a case of difficult labour with the head presenting, state the reasons which will justify your

attempting to deliver with the forceps, and also those which would forbid the forceps and require the perforator.

86. What is the condition of the vagina in prolapsus, inversion, and retroversion of the uterus?

87. In Placenta Prævia state the circumstances which will render turning necessary; those which will justify the use of the forceps; and those in which you may allow the Labour to proceed without interference.

88. A woman, not pregnant, is seized with severe pain of the back, extending round the pelvis, violent bearing down efforts, hæmorrhage, &c. The vagina is occupied with a fleshy tumour which has descended nearly to the os externum. What may that tumour be? Give the diagnosis of the different conditions which correspond to the above symptoms, and their treatment.

89. In what direction must the catheter be passed in partial prolapsus of the uterus, complete prolapsus, retroversion and inversion?

90. Describe the treatment of Hæmorrhage arising from uncontracted uterus after Labour.

91. Describe the situation, form, &c., of the Os Uteri at the commencement of Labour in a primipara and a multipara.

92. A primipara has had pains for some hours; the head presents—the os uteri is barely half-dilated—its edge thin—the pains are feeble and ineffective—she is becoming exhausted from suffering and want

of rest. What are the points to be ascertained as indications of treatment?

93. What are the symptoms in threatened abortion which justify your not attempting the process of expulsion, and those which require you to promote it?

94. Enumerate the symptoms and describe the progress of Labour when the antero-posterior diameter of the pelvis is contracted.

95. State what is known concerning the pathological condition called 'Spurious Pregnancy;' and point out the distinctions between it and other affections for which it may be mistaken.

96. Describe the different forms of Dysmenorrhœa, and the morbid changes with which they are associated.

97. What are the various Displacements of the Uterus? How do they affect Pregnancy and Labour? What remedial methods are recommended in displacements of the Gravid Uterus.

98. Describe a Labour-Pain in the expulsion stage, with its accompanying phenomena.

99. What is the duration of Pregnancy in the human female? What explanations have been suggested to account for its spontaneous termination at the ordinary period?

100. What symptoms would lead you to suspect *that the fœtus* was dead *in utero?*

101. How far is it necessary to interfere in Breech

Presentations? In what way may risk to the child be increased by injudicious management?

102. What are the symptoms of Chronic Inversion of the Uterus? How would you distinguish between Inversion and Polypus of the uterus?

103. Describe minutely the structure of an ovum expelled from the Uterus at the termination of the third month of utero-gestation; and state how you would determine the period of its development.

104. In endeavouring to deliver the Fœtal head arrested at the brim of the pelvis, what are the relative advantages of Forceps, Turning, and Craniotomy? What circumstances would influence you in the selection of the operation.

105. From what causes may Fœtal Life be imperiled during parturition? How would you endeavour to counteract them?

106. State what is known concerning Obstruction of the Arteries in connection with the puerperal state.

107. From what causes may the *os uteri* be so displaced upwards above the *symphysis* pubis as to render examination necessary? Give the differential diagnosis between them.

108. For what conditions may retroverted Uterus at the third month of pregnancy be mistaken? How is the diagnosis to be made?

109. What are the causes which give rise to Retention of Urine in the adult female? What other

forms of swelling may be mistaken for a distended bladder, and how is the distinction to be made?

110. What are the measurements of the normal Female Pelvis? In what respects does Rachitic pelvis differ from that produced by Malacostion; and how does the difference affect our power of rendering efficient service during labour?

111. Describe the various uses of the Uterine sound; the mode of its introduction, with the caution to be observed; and the nature of the information to be derived from its employment in various cases.

112. Describe the operation of Cæsarian Section; indicate the nature of cases requiring it, and the circumstances regulating the time for operating.

113. What is known of the pathology of Puerperal Eclampsia.

114. Give what information you possess concerning the causes, symptoms, and diagnosis of an Effusion of Blood into the Retro-uterine Pouch of the Peritoneum, or into the Cellular Tissue surrounding the Womb.

115. How would you distinguish malignant disease of the *cervix uteri*, from simple granular inflammation of the organ.

116. Describe the condition of the Uterus after delivery, and the changes which take place in it during the convalescence of a puerperal patient.

117. What is Leucorrhœa? State the *pathological conditions* which give rise to it.

*118. D*escribe the forms of Ovarian Tumour, with their diagnosis. What modes of treatment are employed in their different stages.

119. Give a concise account of the opinions which have been held concerning the anatomy of the Placenta. In what does the human placenta differ from other placentæ, according to the Hunterian theory?

120. What are the symptoms, terminations, and treatment of Tubal Gestation.

121. What are Fibrous Tumours of the uterus? Describe their seat, their structure, and the changes which they undergo, also the symptoms to which they give rise, and the means of distinguishing between them and tumours of the ovaries.

122. Mention the peculiarities met with, as regards progress, in cases of labour with twins, the means of diagnosis, and the management of the birth of the second child.

FORENSIC MEDICINE.

1. What are the tests for the detection of Meconate of Morphia? To what fallacies are those tests respectively liable? How would you prove the presence of Opium in Porter?

2. A question arises respecting the wholesomeness of water pumped from a well in the vicinity of a churchyard. What peculiar salts, or other substances, should you expect to find in such water? Upon what would you found an opinion as to its being prejudicial to health?

3. What do you consider to be a poisonous dose of Lobelia inflata? What are the symptoms of poisoning by this substance, and the most appropriate treatment?

4. Describe the distinctive characters of Oxalic Acid, and the means of detecting it, whether free or combined, in organic mixtures.

5. How may the presence of Chloroform be ascertained in the blood, and in the organised tissues?

6. Describe the symptoms and treatment of poisoning by the Essential Oil of Bitter Almonds.

7. A pregnant female is suspected to have died from the effects of Savine. On *post-mortem* examination a green powder is found in the stomach. By

what characters would you recognise it to be Savine?

8. Enumerate the evidences of recent parturition in a living woman.

9. Describe the condition of the uterus after labour at the full time of pregnancy.

10. Describe fully the symptoms of chronic poisoning by Lead, and the diseases which may attend it; also the various modes by which Lead may find its way into the system. In the event of a case proving fatal, what are the appearances that you would expect to find in the dead body? Describe the method of detecting Lead in the tissues.

11. What are the symptoms by which you would recognise a case of poisoning by Oxalic Acid, and what treatment would you adopt. Describe the appearances in the body produced by Oxalic Acid in recent and protracted cases, as well as the processes for detecting this poison in the stomach and tissues.

12. What conditions and diseases are most liable to simulate pregnancy; and how would you distinguish them from pregnancy?

13. A recently-married woman is accused of having already had a child: what is the evidence by which you would determine this question?

14. Describe in detail the method which you would adopt in examining the Stomach and its contents in a case of suspected poisoning by Strychnia. Upon what tests would you rely?

physiological or chemical tests which may be usefully applied in distinguishing such cases.

28. What are the post-mortem signs which would show that abortion had taken place a few days before death?

29. State the certain signs of pregnancy, and the earliest period at which each is perceptible.

30. Detail the phenomena of Death by Drowning; give your own estimate of their respective values as signs of that mode of death; and describe the most approved methods of restoring animation. State, also, after what [illegible] would hope to [illegible] length of time [illegible]

31. What [illegible]

[illegible]

34. What are the chemical peculiarities of the colouring matter of the blood; and how are stains of blood upon woollen clothing to be distinguished from those of red paint, and of those of other colouring matter?

35. What are the uses of arsenious acid in the Arts, and of what substitutes does it admit? What inconvenience would ensue from the entire prohibition of its sale? If necessary that the public should have access to it, under what restrictions should it be furnished?

36. D[illegible] the symptoms and treatment of [illegible]rocyanic acid.

[illegible] symptoms and treatment of ar[illegible]th acute and chronic.

[illegible]arried woman, whose respecta[illegible], has a considerable abdominal [illegible] been gradually increasing for [illegible] uniformly firm and elastic. [illegible]osis would you endeavour to [illegible]ing recourse to examination

[illegible]cipal metallic poisons, and [illegible] by which they are re[illegible]ference to the means of [illegible]heir antidotes.

[illegible] which are more or less [illegible] poisoning by narcotics. [illegible] extent we are assisted by *symptoms* in distinguishing the poison cases from those of natural disease.

41. What are the characteristics of a full-grown fœtus?

42. What is the natural duration of pregnancy, and how far is it possible that this period can be exceeded?

43. When the body of a person poisoned by arsenic is exhumed after being interred for several months, what are the appearances which you would expect to find in it, and what are the parts which it would be especially necessary to remove for the detection of the poison? Describe the methods of analysis which you would consider it advisable to pursue in such a case, with the precautions to be observed in the processes adopted.

44. How would you distinguish a burn occasioned after death from a burn inflicted on the human body during life?

45. To what points would you direct your attention with the view of determining whether a contusion observed on a dead subject had been inflicted during life or after death?

46. In examining a woman at the end of pregnancy, how will you distinguish whether she is a primipara or a multipara?

47. What are the signs of recent delivery, and how long after labour will they hold good?

48. *Poisoning with Sulphuric Acid.* (1.) Symp-

toms. (2.) *Post-mortem* appearances. (3.) Treatment. (4.) Tests for it on clothes.

49. *Rape.* (1.) What constitutes the crime when perpetrated on an adult? (2.) What constitutes it when perpetrated on a child? (3.) Lesions to be looked for on an adult. (4.) Lesions to be looked for on a child. (5.) Natural disease which may be mistaken for effects of rape; points to be observed in order to form an opinion as to this.

50. *Cadaveric Rigidity.* (1.) Whether retarded or quickened by exposure of the body to cold. (2.) By enfeebling disease prior to death. (3.) By robust frame at period of death. (4.) In what order are the muscles affected by it? (5.) In what order does it disappear?

51. *Chronic Poisoning by Lead.* Under what circumstances does it occur? State the symptoms. State prophylaxis and treatment.

52. Bisulphuret of ammonium has been proposed as a test for hydrocyanic acid: describe the mode of using it, its effects, and the nature of the chemical changes which ensue.

53. The earth of a grave in which a body has been interred is stated to contain arsenious acid, either free or in some combination. How would you proceed to determine these points?

54. In the case of a person poisoned by Belladonna, how would you proceed to ascertain the presence of the active principle of this poison in the *urine?*

55. Describe the symptoms and treatment of poisoning by White Lead.

56. Where a knot upon the cord is assigned as the cause of the child's death, how would you determine whether it had been formed before birth or wilfully tied afterwards?

57. State what you know of uterine auscultation in pregnancy.

58. A person was supposed to have been poisoned by a large dose of a white powder, which was suspected to be a vegetable acid, but a question arose a to whether it was oxalic acid, tartaric acid, citri acid, or binoxolate or bitartrate of potassa. How would you settle the question by the chemical examination of the contents of the stomach?

59. What proportion of carbonic acid renders ai poisonous? What proportion of nitrogen renders ai unfit for respiration? What are the products o burning charcoal and of burning coke, and how woul you analytically distinguish them?

60. State the immediate cause of death by drowning; the *post-mortem* appearances observed in fata causes; the period of actual submersion generall required to cause death; and the means which shoul be adopted in order to restore suspended animation.

61. Describe the symptoms of poisoning by th *Aconitum Napellus,* contrasting them with those produced by the *Atropa Belladonna.*

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15. What method is best adapted to the discovery of Hydrocyanic Acid in the body, after poisoning by its means?

16. Describe the appearances produced in the living body by burning with flame, and scalding with boiling water; and state the conditions which would lead you to form an unfavourable prognosis in both cases.

17. Describe the symptoms and *post-mortem* appearances in poisoning with Corrosive Sublimate; in what manner would you act if called upon to treat such a case?

18. In the case of a female child suffering from severe inflammation of the Vulva, with purulent discharge, what circumstances would make you suspect that such inflammation was the result of attempted violation of her person; or what, on the other hand, would discredit such a supposition?

19. Give the anatomical differences between the Nulliparous and the Multiparous Uterus?

20. Describe the tests and characters by which you would distinguish Morphia, Strychnia, Brucia, and Narcotine from each other.

21. How would you determine by *post-mortem* examination which of the three under-mentioned causes had produced perforation of the stomach:—

α. Corrosive poisoning.
β. Ulcerative disease.
γ. Spontaneous or gelatinising perforation.